April 2008 USGS Maryland-Delaware-DC Water Conditions Summary

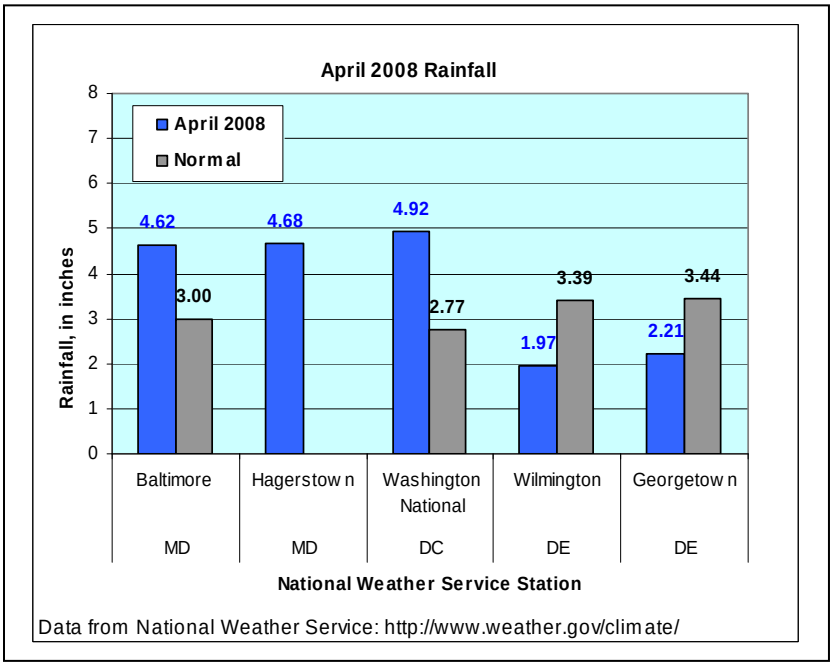
Streamflow and ground-water levels have increased to normal and above normal levels in central and western Maryland at sites used by the U.S. Geological Survey (USGS) to monitor water conditions. Across Maryland, Delaware, and the District of Columbia, streamflow levels were normal to above normal in 69% of streams, yet more than 50% of the ground-water levels remained below normal in April 2008. In late spring, ground-water and streamflow levels begin to decline from the peak winter high levels as temperatures get warmer and the growing season begin.

The driest regions were Southern Maryland and the southern portion of the Delmarva Peninsula, where the lack of rainfall has affected both ground-water and streamflow levels. In this region, water levels in streams rose to normal or above levels, but quickly dropped back to below normal levels. This typically occurs when ground-water levels are low because the dry ground is soaking up the rain and runoff and little of the water is recharging ground water. It is likely that without above normal rainfall that the water levels in southern Maryland and the lower Delmarva will not be able to recover to normal levels during the summer.

Precipitation

April 2008 rainfall was more than 1.5 inches above normal at the National Weather Service stations in Maryland and the District of Columbia. However, rainfall was more than an inch below normal in Delaware. The rainfall deficit for the past 365 days is the greatest in Southern Maryland and the lower Delmarva Peninsula. The deficit is more than 10 inches in nine counties in Maryland: Calvert, Caroline, Dorchester, Howard, St. Mary's, Somerset, Talbot, Wicomico, and Worcester Counties in Maryland; and two counties in Delaware: Kent and Sussex. The table below ranks the counties with deficits greater than 10 inches from highest to lowest deficit.

Sources: National Weather Service
MD and DC: http://www.weather.gov/climate/index.php?wfo=lwx
DE: http://www.erh.noaa.gov/phi/

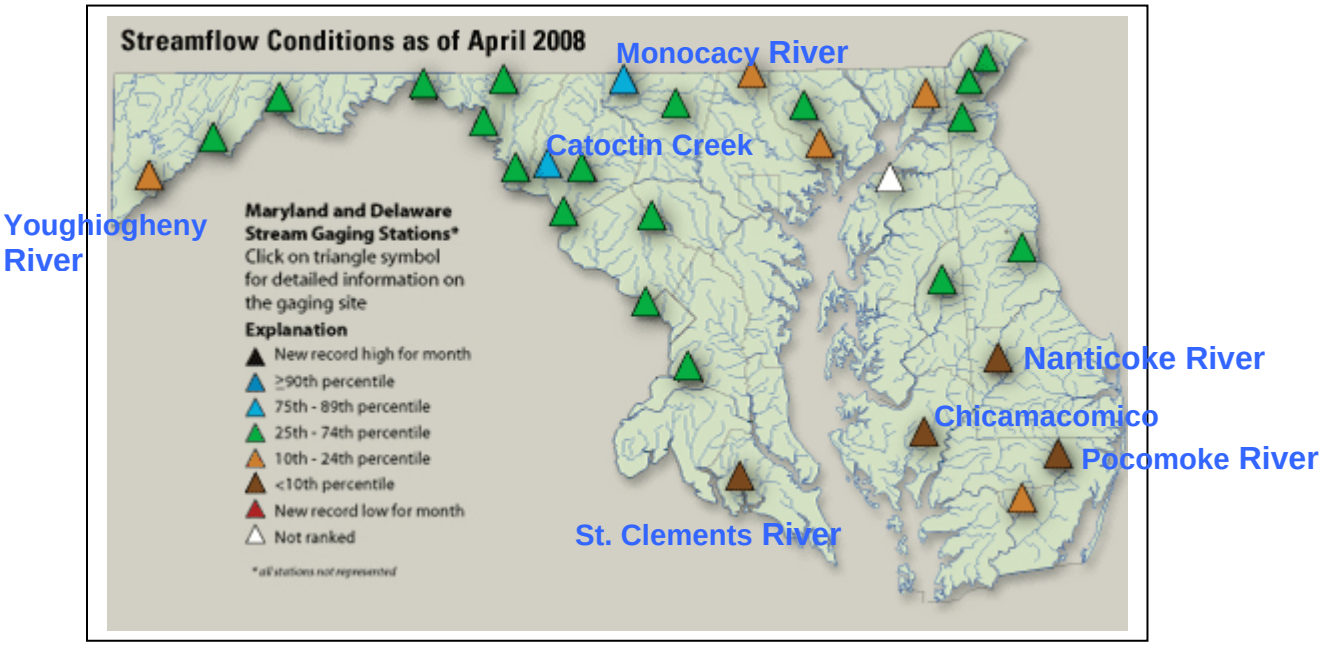


Middle Atlantic River Forecast Center: http://www.erh.noaa.gov/marfc/Maps/precip.html

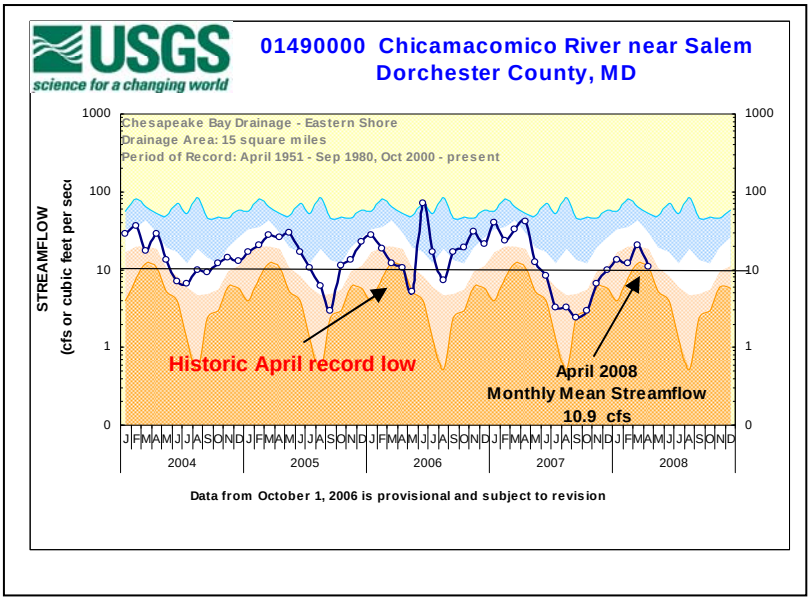
365 Day Rainfall Deficit - April 30, 2008		
State	County	Inches
MD	Wicomico	14.0
MD	Calvert	13.9
DE	Sussex	13.7
MD	Talbot	13.5
MD	Dorchester	12.7
MD	Somerset	12.6
MD	Worcester	12.1
MD	St Marys	11.6
DE	Kent	11.2
MD	Caroline	10.9
MD	Howard	10.1

Streamflow

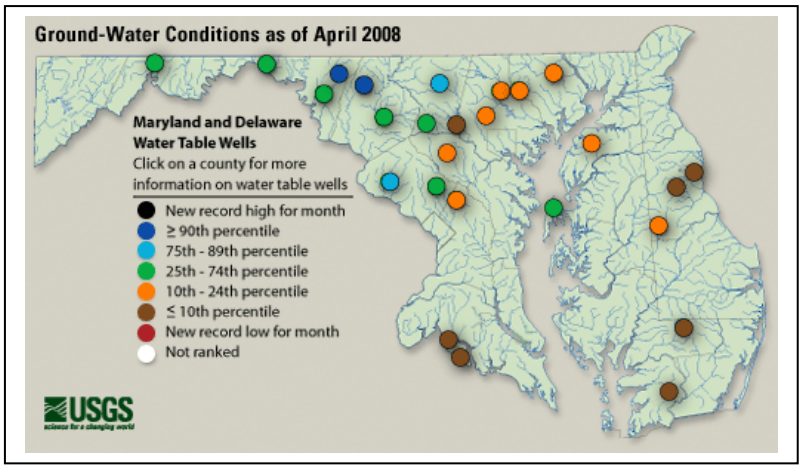
Streamflow at gages used by the USGS as climate indicators across the Maryland, Delaware, District of Columbia region was predominantly normal in central and western Maryland and northern Delaware, but below normal in Southern Maryland and the lower Delmarva Peninsula. Only Catoctin Creek and Monocacy River in Frederick County, MD had above normal monthly mean streamflow. Nine sites were below normal, including the Youghiogheny River in the Monogahela watershed in western Maryland. Monthly mean streamflow was in the lowest 10th percentile for the period of record (shown as brown triangles on April 2008 streamflow conditions map) for the following rivers: Chicamacomico River in Dorchester County, Pocomoke River in Worcester County, St. Clements Creek in St. Mary's County, in Maryland, and the Nanticoke River in Sussex County, Delaware.



In the 5-year hydrograph for the Chicamacomico River, notice how the monthly mean streamflow level (dark line) dropped more quickly than normal (white band) and the April 2008 value is only 0.5 cubic feet per second away from the historic record low set in April 2006.



Ground Water

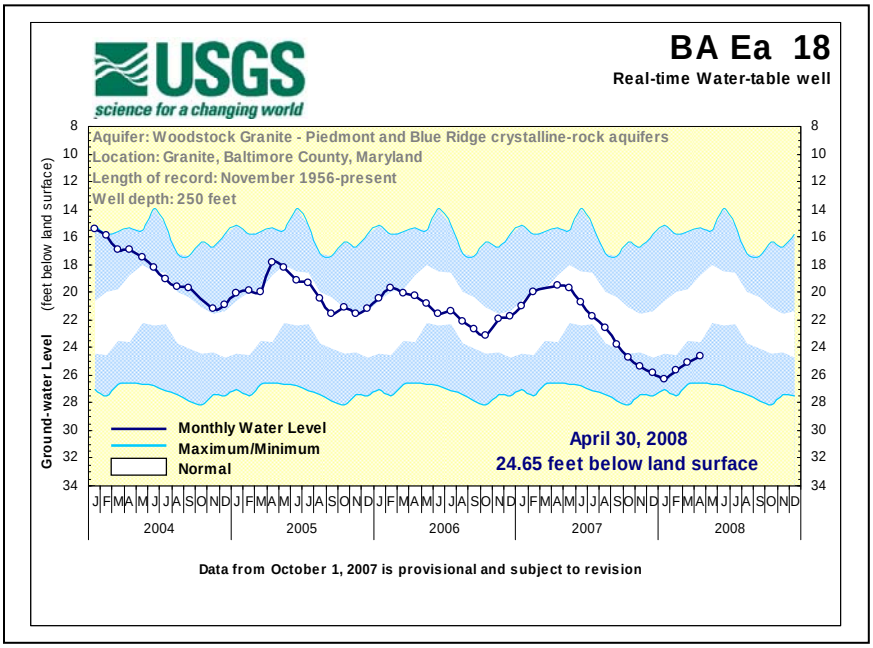


Ground-water levels have improved to above normal levels in Carroll, Frederick, Montgomery, and Washington Counties, but were worse in other parts of Maryland and Delaware. In April, more than half of the unconfined wells used by the USGS to assess response to climatic conditions were below normal. The region with the lowest ground-water levels continued to be southern Maryland and the lower Delmarva Peninsula where the rainfall deficit is over 10 inches for the last 365 days. Rainfall has not been enough to offset the dry conditions experienced last summer.

Ground-water levels are typically close to their peak at this time of year and they start to drop as temperatures rise and the growing season begins. Water levels have begun to drop in Charles, Prince Georges, Somerset, Wicomico, and Kent Counties in Maryland, and Kent County in Delaware. The wells that are colored brown in the ground-water conditions map are in the lowest 10th percentile for the period of record for April. At these wells, the historic record low water levels were in 1986, 2002, and 2006. Without above normal rainfall, ground-water levels in southern Maryland and the lower in Delmarva will not recover to normal levels during the summer.

Five-year hydrographs for these wells can be viewed at:
http://md.water.usgs.gov/groundwater/web_wells/current/water_table/counties/

Ground-water levels have risen in central and western Maryland, such as well BA Ea 18 in Baltimore County. The 5-year hydrograph for this deep, unconfined well shows the water level (shown as a dark line) is rising at close to the normal rate, but continues to be below normal (white band) at the end of April. The overall 5-year trend is downward from the high in January 2004.



Reservoirs

Water available from the Baltimore reservoir system (Loch Raven, Liberty, and Prettyboy) increased to 92% of the available storage (69.6 billion gallons) at the end of April.

Water stored in the Triadelphia and Duckett Reservoirs, which serve Montgomery and Prince George's Counties, increased to 89% of the normal capacity at the end of April.

April 2008	Percent available /normal storage	Volume (billion gallons)	Source
Baltimore Reservoirs			**Baltimore City**
Loch Raven	100%	21.2	
Liberty	89%	32.2	
Prettyboy	92%	16.2	
Total	92%	69.6	
Patuxent Reservoirs			**Washington Suburban Sanitary Commission (WSSC)**
Triadelphia	85%	4.74	
Duckett	93%	4.66	
Total	89%	9.40	