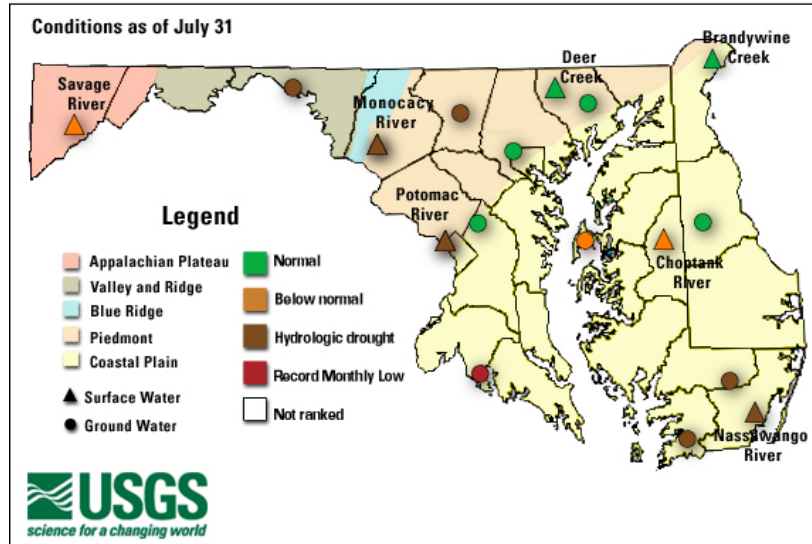


## July 2007 USGS Maryland-Delaware-DC Water Conditions Summary

The dry summer is reflected in the hydrologic conditions monitored by the U.S. Geological Survey (USGS) for the Maryland, Delaware, and the District of Columbia (DC) region. Based on USGS streamflow and ground-water data, hydrologic conditions in Maryland and DC range from normal to hydrologic drought at the end of July 2007. The U.S. Drought Monitor shows more than 50 percent of Maryland is in 'severe' drought conditions. The most affected regions are southern and central Maryland and the Eastern Shore.

In Delaware, streamflow and ground-water levels are in the normal range, however the U.S. Drought Monitor shows 40 percent of the state in 'severe' drought.



Agriculture in Delaware and Maryland has definitely been affected by the lack of widespread rain over the last several months. Publicly supplied water in both states is generally adequate to meet most needs, although ground-water levels have dropped enough to leave some private wells without water. Water conservation is encouraged in Carroll and Frederick Counties, and the Ocean City region.

Useful Links:

### Maryland-Delaware-District of Columbia

USGS Drought Watch

<http://md.water.usgs.gov/drought/index.html>

USGS Water Summary

[http://md.water.usgs.gov/waterdata/water\\_conditions/current/index.html](http://md.water.usgs.gov/waterdata/water_conditions/current/index.html)

Streamflow

<http://md.water.usgs.gov/surfacewater/streamflow/>

Ground Water

[http://md.water.usgs.gov/groundwater/web\\_wells/current/water\\_table/counties/](http://md.water.usgs.gov/groundwater/web_wells/current/water_table/counties/)

Chesapeake Bay

<http://md.water.usgs.gov/monthly/bay.html>

### National

USGS Streamflow and ground-water levels

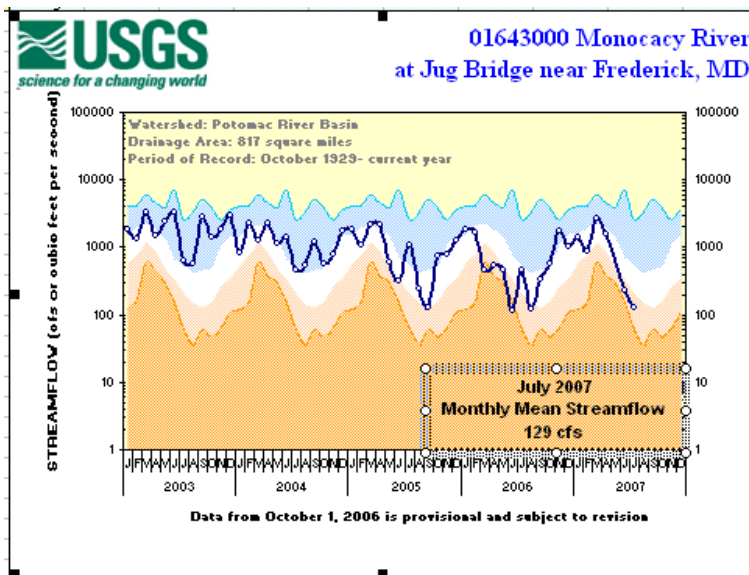
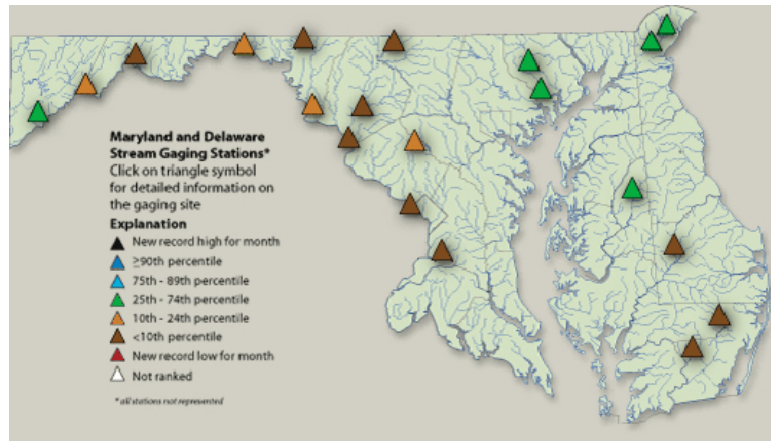
<http://waterdata.usgs.gov/nwis>

U.S. Drought Monitor from the National Drought Mitigation Center

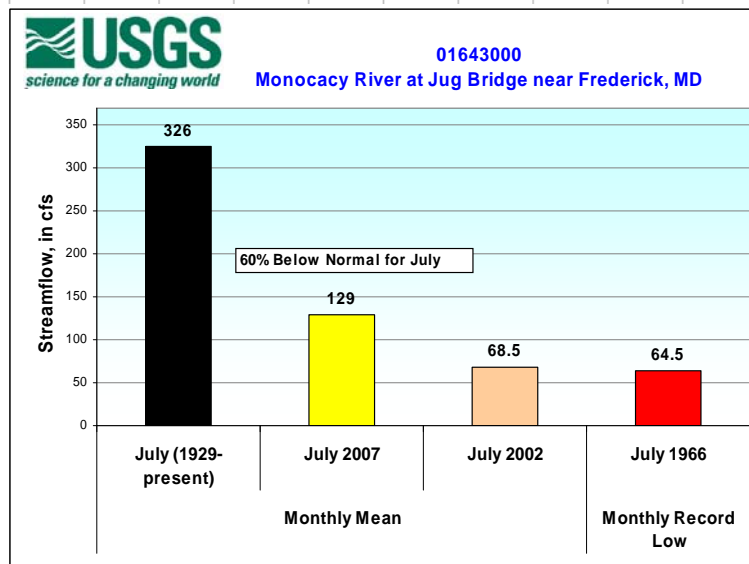
<http://drought.unl.edu/dm/monitor.html>

## Streamflow

In Maryland and Delaware, 20 USGS streamflow gaging stations were used to characterize streamflow conditions. At the end of July, the monthly mean streamflow was below normal in 14 streams, with the Conococheague Creek, Monocacy River, Nassawango Creek, Piscataway Creek, Pocomoke River, Potomac River, and Wills Creek below the 10<sup>th</sup> percentile. Four streams in Maryland were in the normal range. Brandywine Creek and White Clay Creek in Delaware were also normal at the end of July.



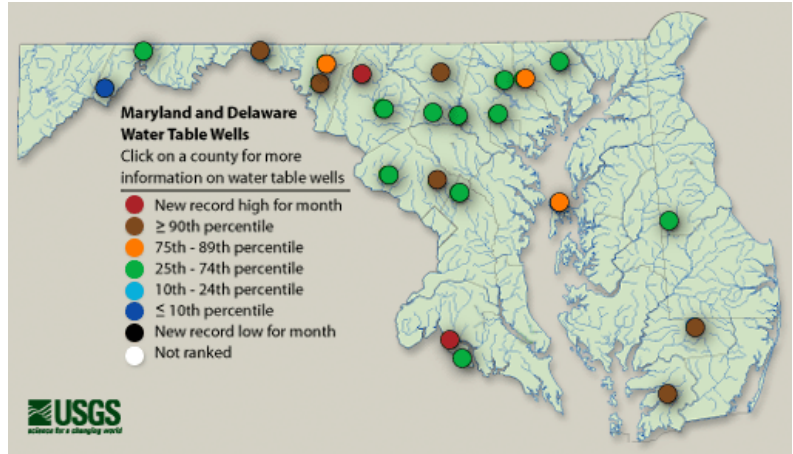
Streamflow on the Monocacy River continued to drop more quickly than normal in July. The monthly mean streamflow was 60% below normal with 129 cfs (cubic feet per second).



Normal for July is 326 cfs, The previous July record was in 1966 with 64.5 cfs. In 2002, the streamflow was 68.5 cfs

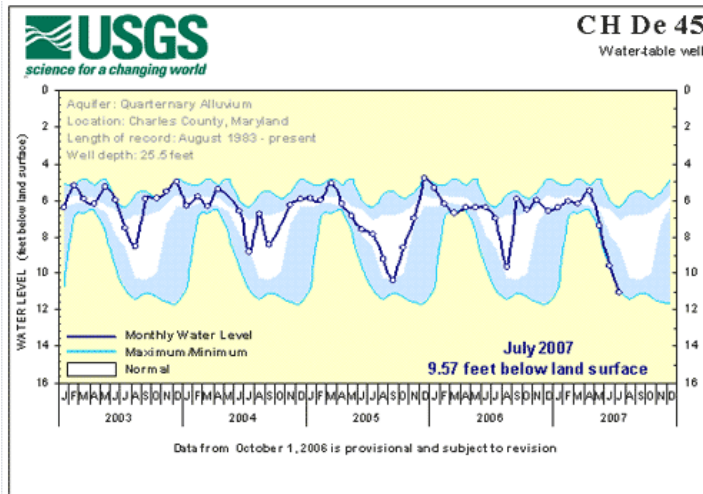
## Ground Water

Many ground-water levels monitored by the USGS have dropped at a greater than normal rate in July. However, ten of the 22 wells used to assess the water conditions in Maryland for July remain at normal levels. Many of these wells are in central Maryland. Without normal rainfall, many of the wells will be below normal in the coming months.



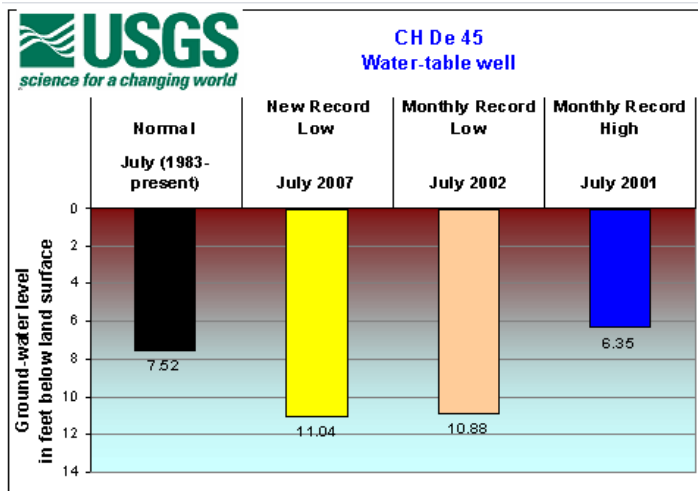
The water-table well in Allegany County was the only well above normal and has been for the past three months, although the water level is dropping as expected for this time of year. The status of the monthly ground-water level depends on the aquifer the well taps, the well construction, and the period of record of the data.

Six wells were below normal and two water table wells have set record lows for July. Wells in Charles and Frederick Counties moved from being below the 10<sup>th</sup> percentile in June to setting record lows for July. In Charles County, well CH De 45 has been near record low levels for the previous two months and has reached the lowest July level since 1983.



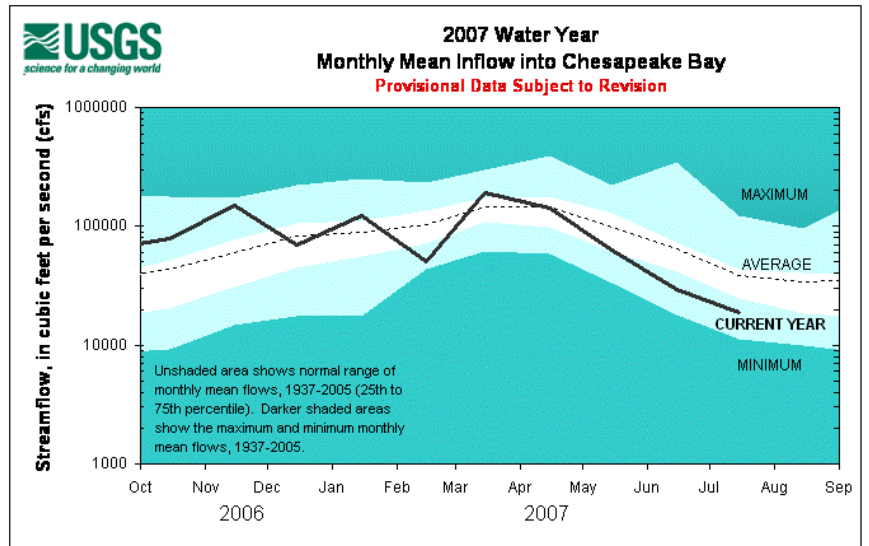
The water level is shown in depth below land surface for this Charles County well. The normal band is shown in white. Notice that since April, the water levels have declined faster than the normal rate based on 24 years of data.

The previous July low occurred during the drought in 2002. It is unusual that the highest July ground-water level at this well was in 2001. Normal water level for this well is 7.52 feet below land surface. In July 2007, the water level was 11.04 feet.



## Chesapeake Bay Freshwater Flow

The estimated monthly mean inflow to the Chesapeake Bay for July was 18,900 cfs (cubic feet per second) or about 50 percent of the long-term mean for July. Average July flow is 38,100 cfs. The freshwater flow has been decreasing at more than the normal rate since April 2007.

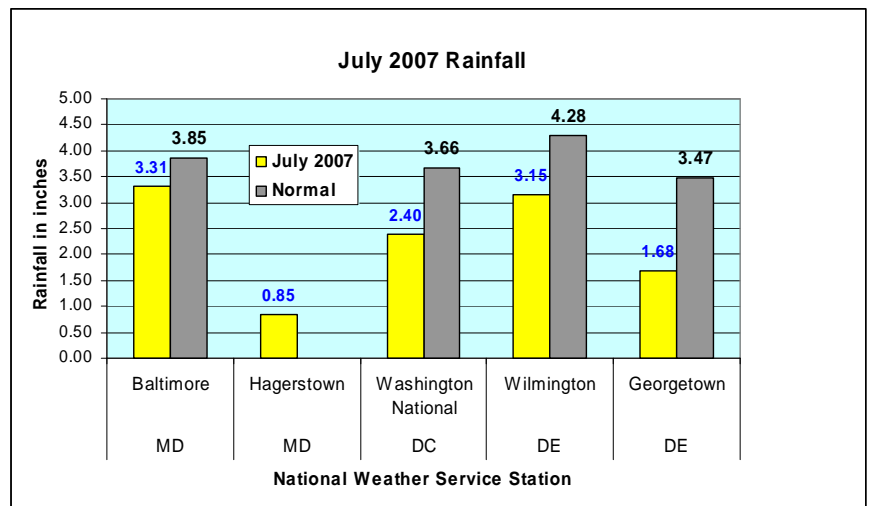


<http://md.water.usgs.gov/monthly/bay.html>

## Precipitation

The weather in Maryland has been dry since mid-April. National Weather Service data are shown in the table below and at each weather station, rainfall was below normal. The rainfall that has occurred has been from localized showers; there has been little widespread rainfall.

Rainfall at Baltimore (BWI) was near normal for July with 3.31 inches. However, it only rained 5 days during July and most of the rain occurred on July 10 (1.84 inches). Rainfall at Hagerstown was only 0.85 inches. Data has not been collected at Hagerstown long enough to calculate a departure from normal.



Data from National Weather Service:

<http://www.weather.gov/climate/index.php?wfo=lxw>

## Reservoirs

Contents of the Baltimore reservoir system (Lock Raven, Liberty, and Prettyboy) was 90 percent at the end of July. Water stored in the Triadelphia and Duckett Reservoirs, which serves Montgomery and Prince George's Counties, were at 76 percent of the normal capacity at the end of July.