

## September 2008 USGS Maryland-Delaware-DC Water Conditions Summary

Above normal rainfall in September 2008 caused many water levels to rise, and more than 50% of the water levels in streams and wells were at normal levels at sites used by the U.S. Geological Survey (USGS) to monitor water conditions across Maryland, Delaware, and District of Columbia.

Streamflow levels were normal in 21 of the 30 streams monitored by the USGS. Streamflow was above normal in 4 streams and below normal in 5 streams in September. The driest region was in Delaware and the Delmarva Peninsula, where water levels were below normal, and the monthly mean streamflow on the Chicamacomico River was near a record low for September.

Ground-water levels were below normal in 11 of the 25 wells monitored in September. Most of these wells are located in central Maryland and the Delmarva Peninsula. Water levels in the remaining 14 wells were in the normal range.

### Precipitation

September rainfall was above normal in Maryland, Delaware, and the District of Columbia based on National Weather Service data. Rainfall was more than 3.24 inches above normal at the BWI Airport weather station, which is almost twice the normal rainfall.

Normal rainfall in September is between 3 and 4 inches. Rainfall was above normal in all counties in Maryland except Garrett County. Rainfall was over 7 inches in Anne Arundel, Baltimore, Carroll, Harford, and Montgomery Counties in Maryland, and in the District of Columbia. In Cecil, Frederick, Howard, and Prince George's Counties in Maryland, rainfall was above 6 inches. September rainfall was also above normal in Delaware's three counties.

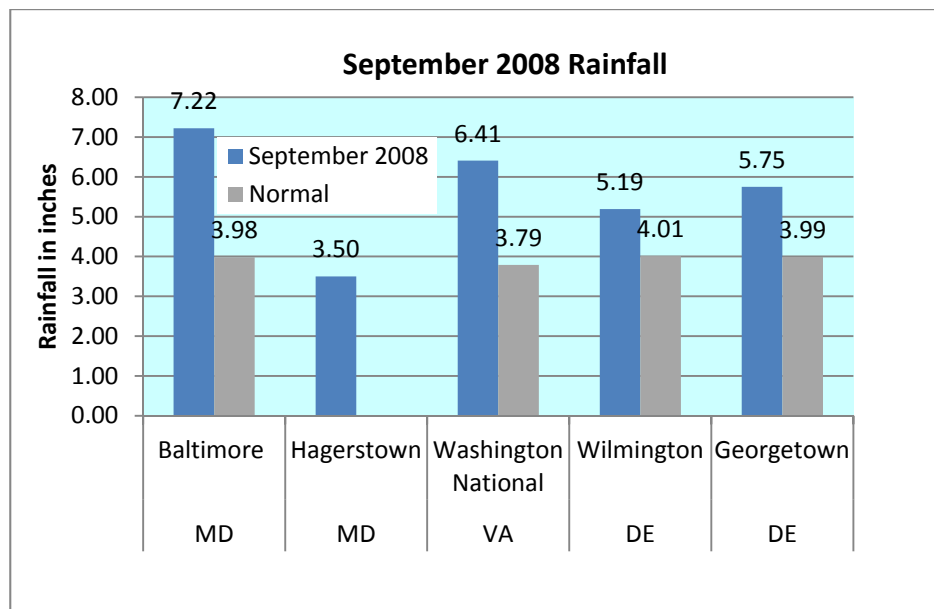
For the past 365 days, precipitation was generally normal in the Maryland, Delaware, and District of Columbia areas.

Sources: National Weather Service

MD and DC: <http://www.weather.gov/climate/index.php?wfo=lwx>

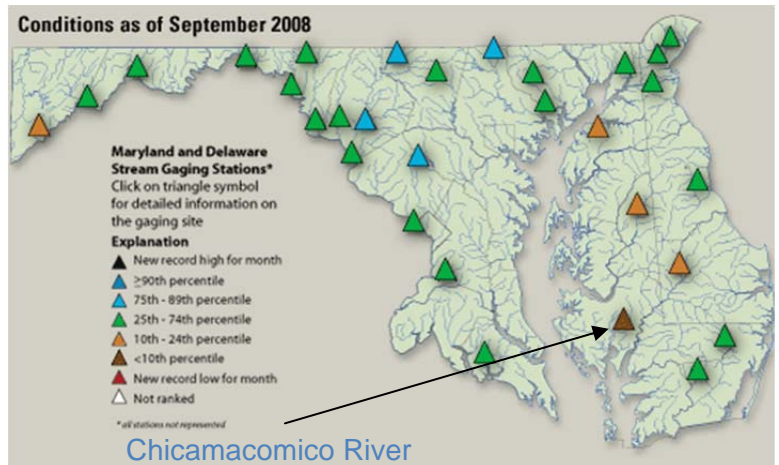
DE: <http://www.erh.noaa.gov/phi/>

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



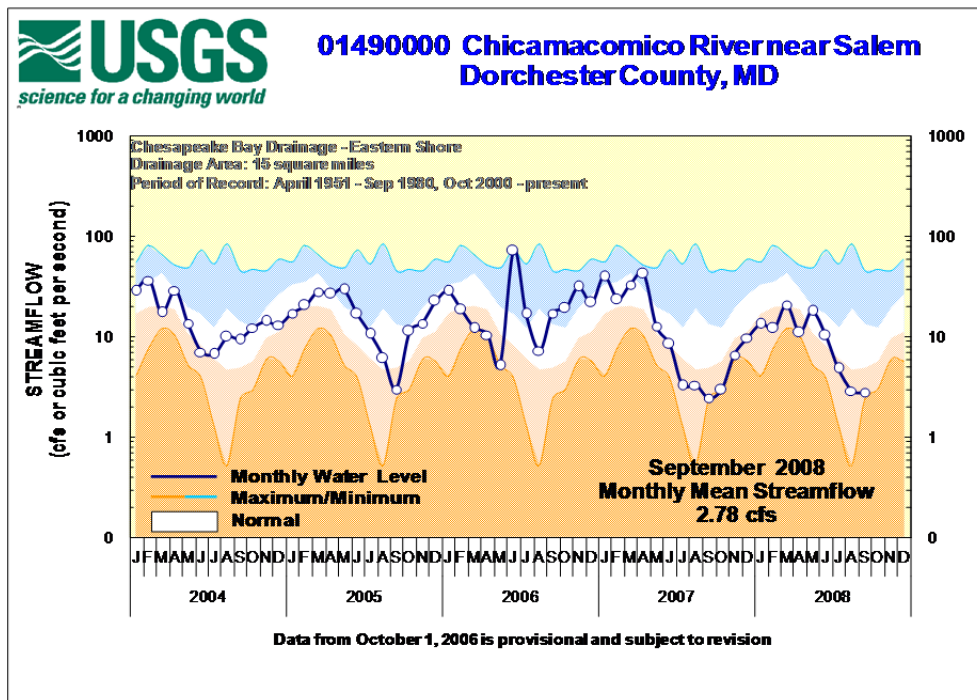
## Streamflow

The above normal rainfall across the region left 70% of streams with normal monthly mean streamflow levels. Five streams had below normal water levels, and the Chicamacomico River was only 0.34 cfs away from the monthly record low of 2.44 cfs set in 2007. At this stream, September monthly streamflow only dropped below 4 cfs three times since record keeping began in 1951, and those years have been recent: 2008, 2007, and 2005.



Only 4 of the 30 streams used by the USGS as climate indicators across the Maryland, Delaware, and the District of Columbia region were above normal. The highest monthly flows were on the Monocacy and Patuxent Rivers.

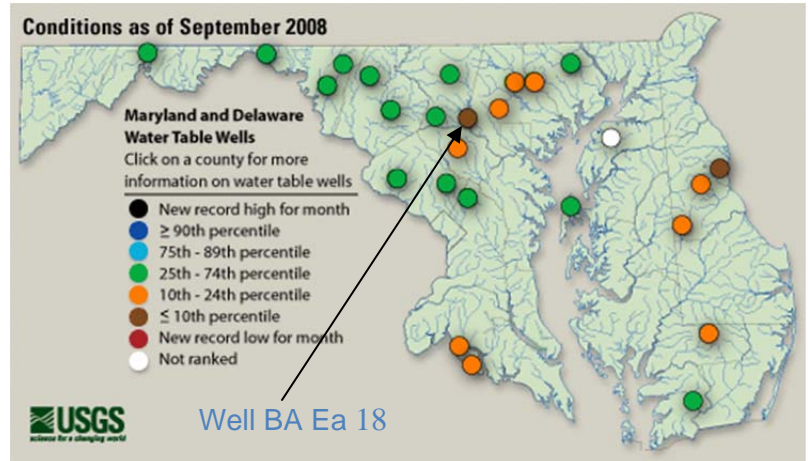
The monthly mean streamflow level on the Chicamacomico River dropped further in September to only 0.34 cubic feet per second (cfs) greater than the September record low. The September record low is 2.44 cfs set in September 2007. There was only one other time the monthly mean flow was below 4 cfs and that was in 2005 with 2.98 cfs. September flow was 5.80 cfs during the 2002 drought.



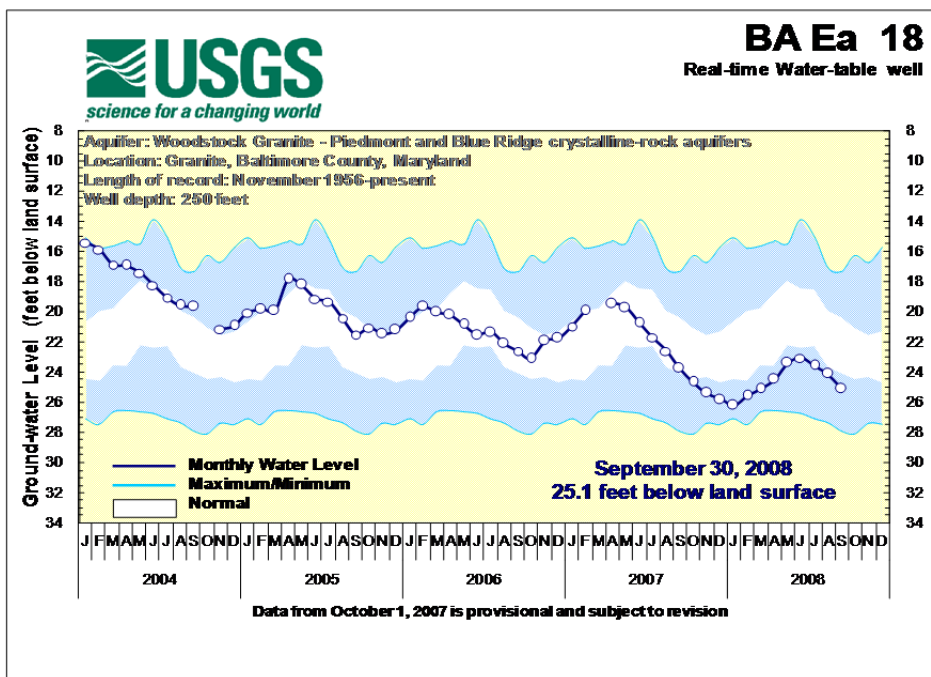
The 5-year hydrograph shows the water level as a dark line and normal (between the 25<sup>th</sup> and 75<sup>th</sup> percentiles) as a white band. Five-year hydrographs for these streams can be viewed at: <http://md.water.usgs.gov/surfacewater/streamflow/>

## Ground Water

Ground-water levels in the unconfined wells used by the USGS to measure response to climatic conditions were normal in 14 of the 25 wells in Maryland and Delaware. The remaining 11 wells had below normal water levels, and are located in central Maryland and Delaware.



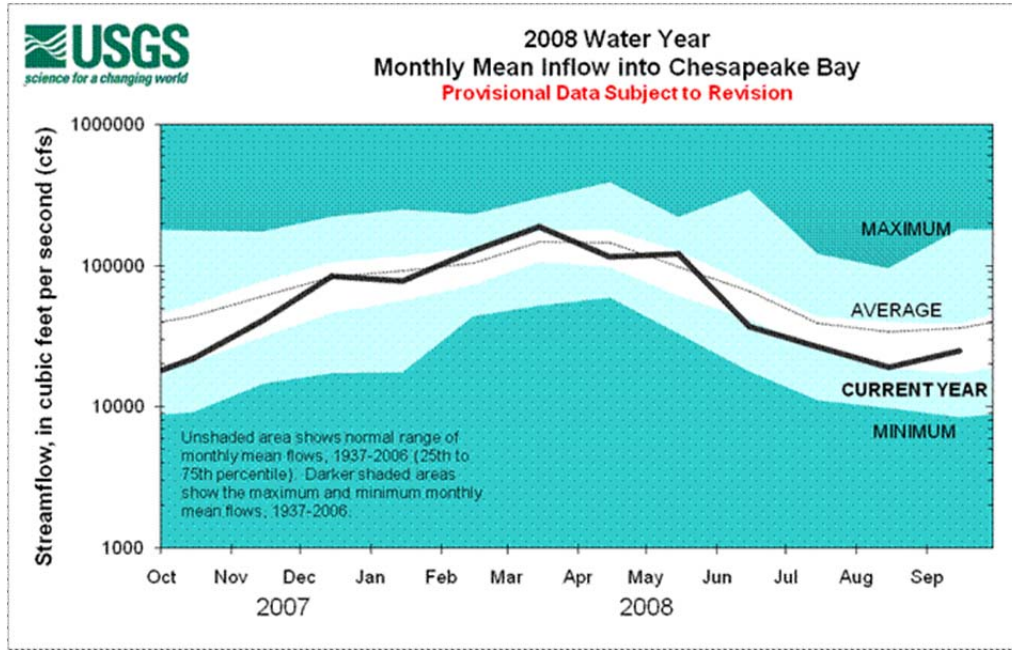
The water level in well BA Ea 18 in Baltimore County continued to drop, and was in the lowest 10<sup>th</sup> percentile. The trend over the last 3 years has been downward.



The 5-year hydrograph shows the water level as a dark line and normal (between the 25<sup>th</sup> and 75<sup>th</sup> percentiles) as a white band. Five-year hydrographs for these wells can be viewed at: [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 Freshwater Flow

The estimated mean monthly flow to the Chesapeake Bay for September was 25,021 cfs (cubic feet per second) or about 69% percent of the long-term mean for September. Average September flow is 36,160 cfs.



## Reservoirs

Water available from the Baltimore reservoir system (Loch Raven, Liberty, and Prettyboy) increased 4% to 91% of the available storage (69.20 billion gallons) at the end of September.

Water stored in the Triadelphia and Duckett Reservoirs, which serve Montgomery and Prince George's Counties, decreased to 62% of the normal capacity at the end of September.

September 2008	Percent available /normal storage	Volume (billion gallons)	Source
<b>Baltimore Reservoirs</b>			<b>Baltimore City</b>
Loch Raven	100%	21.20	
Liberty	86%	30.89	
Prettyboy	96%	17.11	
<b>Total</b>	<b>91%</b>	<b>69.20</b>	
<b>Patuxent Reservoirs</b>			<b>Washington Suburban Sanitary Commission (WSSC)</b>
Triadelphia	82%	4.60	
Duckett	43%	2.14	
<b>Total</b>	<b>62%</b>	<b>6.74</b>	

