

December 2009 USGS Maryland-Delaware-DC Water Conditions Summary

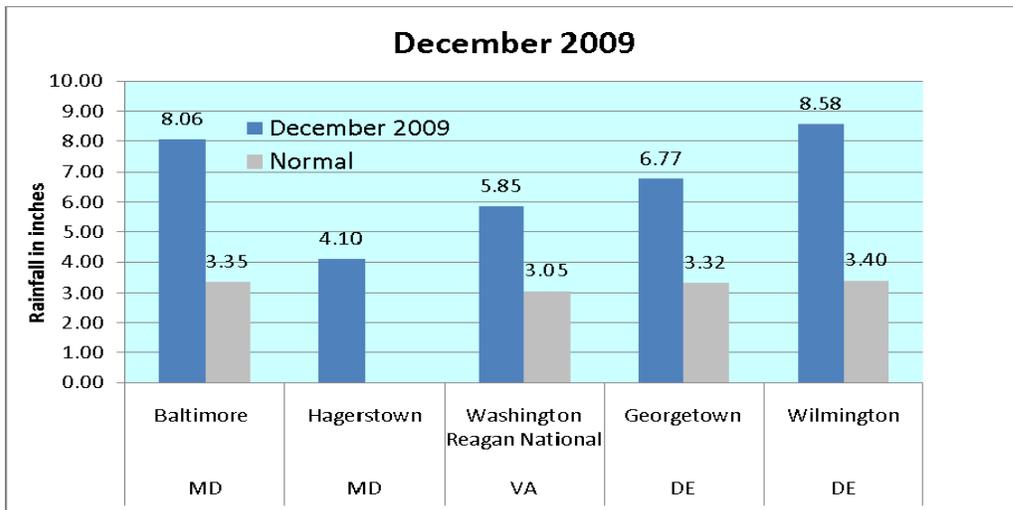
Above normal precipitation in December led to 7 high streamflow records and 5 high groundwater level records for the month. Water levels were normal to above normal in all 29 streams and all 26 wells used by the U.S. Geological Survey (USGS) to assess response to climatic conditions in Maryland, Delaware, and the District of Columbia.

Precipitation

Precipitation was above normal for the third straight month in Maryland and the District of Columbia. The National Weather Service reports that rainfall at Baltimore was 4.71 inches above normal in December. The Hagerstown weather station does not have enough record to calculate statistics. The District of Columbia had 5.85 inches of precipitation, which is 2.8 inches above normal.

The weather highlight of December was the record setting high snowfall December 18-19 in Baltimore and the District of Columbia. It was the snowiest December on record at Baltimore with 23.2 inches of snowfall, exceeding the previous record of 20.4 inches in 1966, according to the National Weather Service. Record keeping in Baltimore began in 1871. The District of Columbia had 16.6 inches of snowfall, which broke the record of 16.2 inches set in 1962.

Precipitation in Wilmington, Delaware was 8.58 inches, which is more than double the normal December value of 3.40 inches. There have been several reports of flooded basements related to the abundant rainfall. At Georgetown, Delaware, rainfall was 6.77 inches in December.



For the last 365 days, departures from normal precipitation ranged from 6.6 inches below normal in Garrett County to 16.6 inches above normal in Caroline County. All counties in Delaware, the District of Columbia, and 16 Counties in Maryland had precipitation greater than 10 inches above normal for the last 365 days. Annual precipitation at Baltimore (55.57 inches) was the 6th wettest since 1871. The record is 62.66 inches in 2003.

Sources: National Weather Service

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

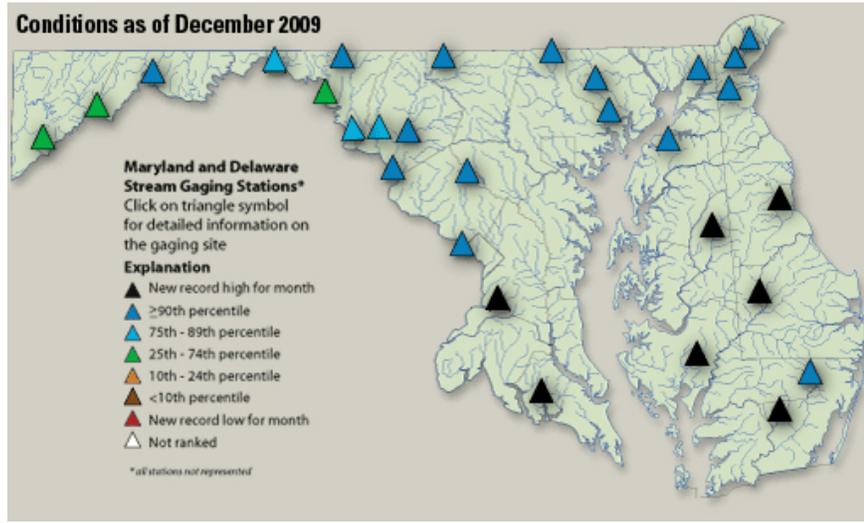
DE: <http://www.erh.noaa.gov/phi/>

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

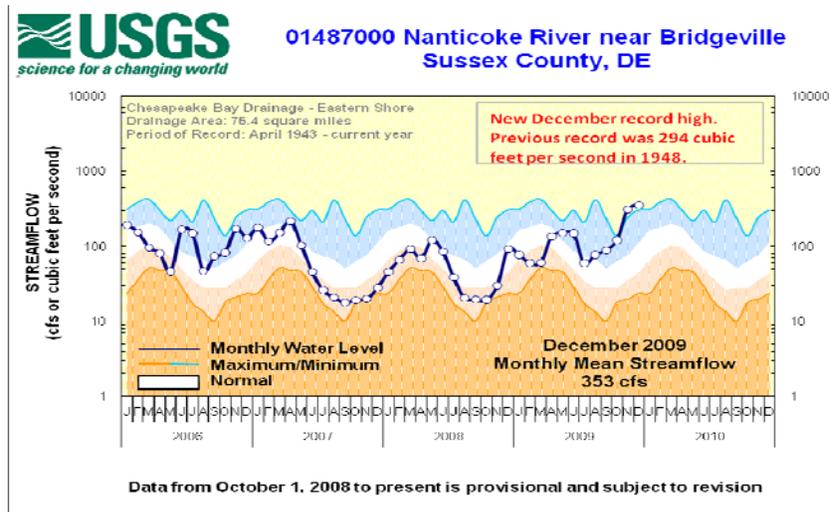
Streamflow

Streamflow was above normal in 90% of the 29 USGS streamflow stations used to assess climatic conditions in Maryland, Delaware, and the District of Columbia. The remaining 10% were normal.

There were 7 sites with record high monthly mean streamflows in December: Chicamacomico River, Choptank River, Nanticoke River, Nassawango Creek, Piscataway Creek, St. Clements Creek, and St. Jones River. The previous record high on the Nanticoke River was in 1948, and the remaining 6 records were in either in 1996 or 1972.



Monthly mean streamflow on the Nanticoke River set a new record high for the second consecutive month. In December, the monthly mean streamflow was the highest it has been in 61 years, exceeding the record by 59 cubic feet per second. The dark line in the 5-year hydrograph represents the current flow and the white band shows the normal range based on the period of record. The hydrograph below shows that the monthly mean streamflows have risen faster than normal since August.

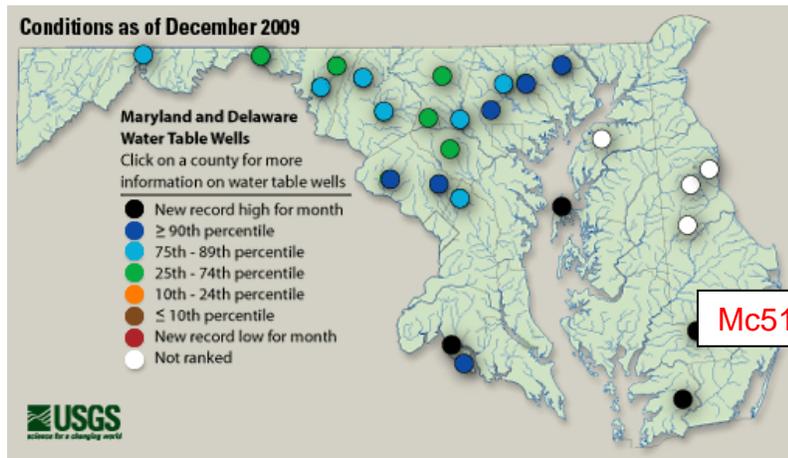


Five-year hydrographs can be viewed at: <http://md.water.usgs.gov/surfacewater/streamflow/>

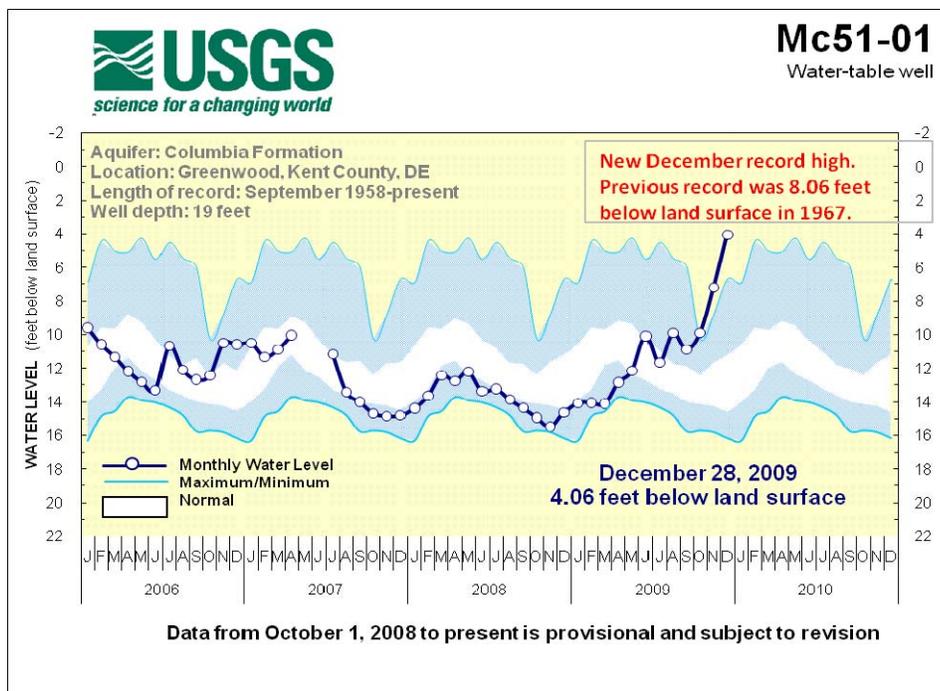
Groundwater

Groundwater levels were above normal in 81%, and normal in 19% of the 26 wells used by the USGS to assess climatic conditions. Water levels in 5 wells were at the highest December level since record-keeping began.

The wells in Kent County, Delaware, and Somerset County, Maryland, were at record highs for the second consecutive month. Record December highs were also set in Charles, Queen Anne's, and Wicomico Counties.



For the second consecutive month, the groundwater level in well Mc51-01 in Kent County, Delaware continued its sharp rise to a new record high for December, exceeding the record set in 1967 by 4 feet. The December measurement is also the new all-time record high. The 5-year hydrograph shows the water level as a dark line and normal range (between the 25th and 75th percentiles) as a white band.



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

Reservoir Levels

Storage in the Baltimore reservoirs (Loch Raven, Liberty, and Prettyboy) was 95% of available storage with 69.38 billion gallons in available storage at the end of December 2009.

The Triadelphia and Duckett Reservoirs, which serve Montgomery and Prince George's Counties, were 99.5% of normal at the end of December 2009.

December 2009	Percent available /normal storage	Volume (billion gallons)	Source
Baltimore Reservoirs			Baltimore City
Loch Raven	100%	21.20	
Liberty	100%	36.80	
Prettyboy	100%	17.85	
Total	100%	75.85	
Patuxent Reservoirs			Washington Suburban Sanitary Commission (WSSC)
Triadelphia	99%	5.57	
Duckett	100%	5.09	
Total	99.5%	10.66	