

January 2011 USGS Maryland-Delaware-District of Columbia Water Conditions Summary

Streamflow and groundwater levels were below normal in 29 of the 33 streams and 14 of the 26 wells monitored by the U.S. Geological Survey (USGS) to assess the response to climatic conditions in Maryland, Delaware, and the District of Columbia region. Streamflow was normal in the remaining four streams. None of the streams had above normal streamflow in January.

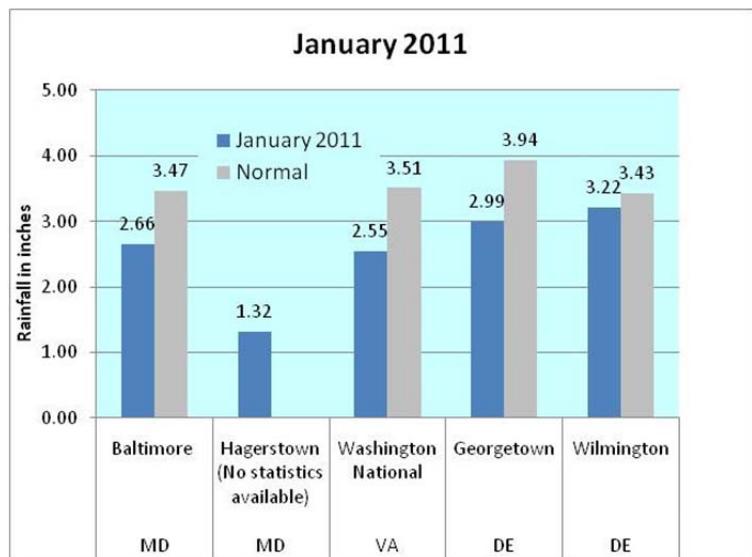
Groundwater levels were below normal in 14 of the 26 wells and a new January record low was set for the second consecutive month in Carroll County, Maryland. In ten of the wells, the groundwater level was normal and above normal in two wells.

Note: Below normal precipitation and temperatures across Maryland, Delaware, and the District of Columbia may be affecting groundwater and streamflow levels. According to Ed Doheny, surface water specialist for the USGS in Baltimore, Maryland, “*this winter has been one of the worst in recent memory as far as ice affected streams. It's likely that a number of stations in the network will have significant adjustments made to the daily values for most of December and January*”. Data are provisional until the records are thoroughly review and approved.

Precipitation

January precipitation and temperature was below normal for the second consecutive month at National Weather Service stations in Maryland, Delaware, and the District of Columbia. The weather station with the lowest amount of precipitation in January was in Hagerstown with 1.32 inches. There is not enough record to do statistics at this station.

The weather station with the largest amount of precipitation in January was in Wilmington, Delaware with 3.22 inches, but it was still below normal. The January snow total in Wilmington was 18 inches with 10.3 inches in one event on January 26.



The Middle Atlantic River Forecast Center’s 365-day and “year-to-date” departure from the average precipitation maps show most of the region within the normal range, but several counties in western Maryland were below normal.

Sources:

National Weather Service

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

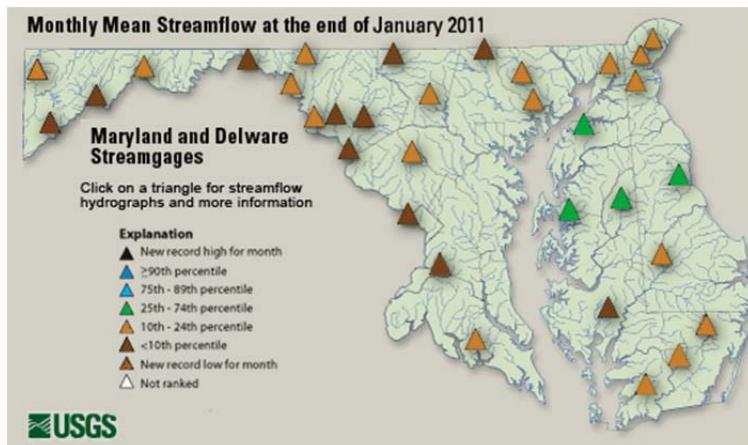
DE: <http://www.erh.noaa.gov/phi/>

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

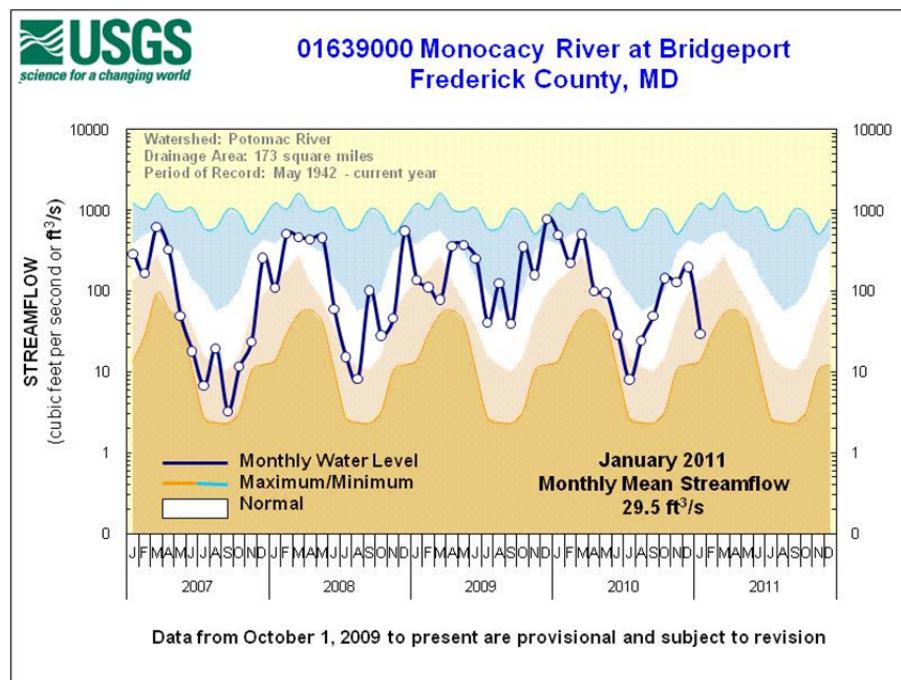
Streamflow

January monthly mean streamflow was below normal at 19 of the 33 USGS streamgages used to assess climatic conditions in Maryland, Delaware, and the District of Columbia. Streamflow in the remaining four streams was normal.

Streamflow values could be higher or lower than the provisional values, because of cold weather, potentially creating ice dams, freezing of the intake pipes and orifice lines at the streamgages, or because of the frozen ground and lack of melting and runoff.



The monthly mean streamflow on the Monocacy River at Bridgeport dropped from normal levels in October through December, to below normal or $29.5 \text{ ft}^3/\text{s}$ (cubic feet per second) in January. The drop in streamflow since December could be artificial derived from the cold weather. The dark line in the 5-year hydrograph represents the current monthly mean streamflow and the white band shows the normal range (25th to 74th percentile) based on the period of record beginning in 1942.

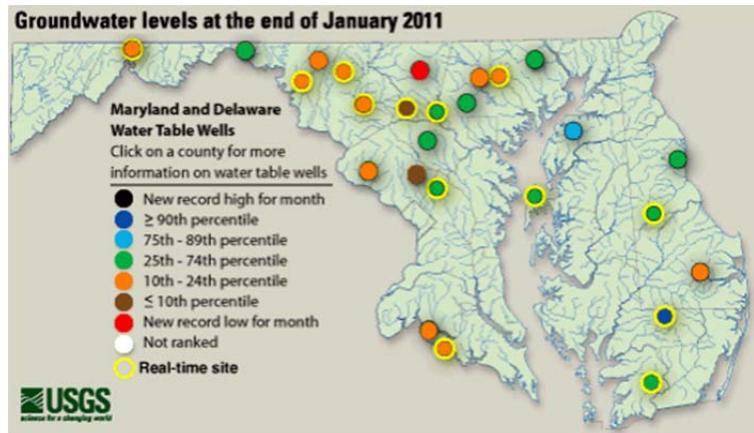


Five-year hydrographs can be viewed at: <http://md.water.usgs.gov/surfacewater/streamflow/>

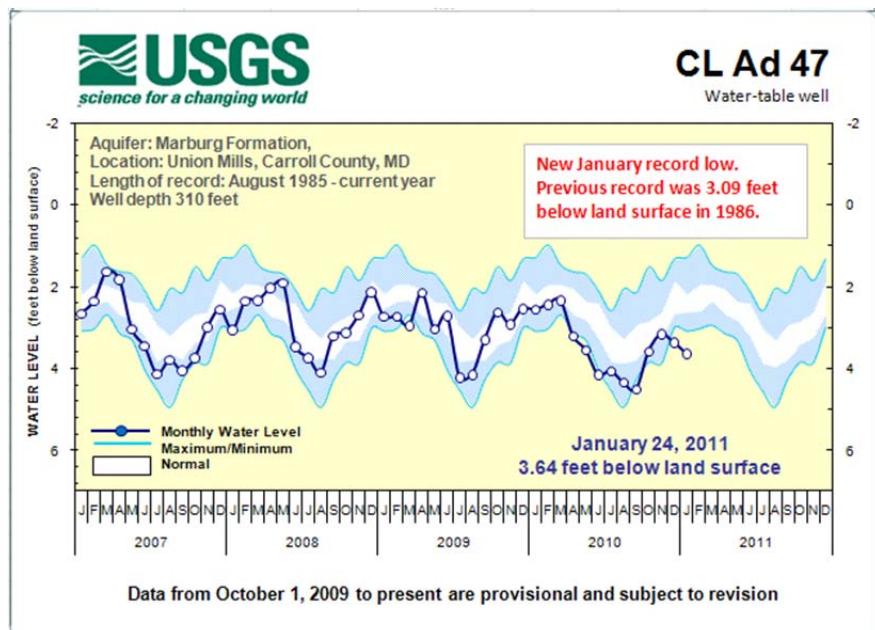
Groundwater

Groundwater levels were below normal in 14 of the 26 wells used by the USGS to assess climatic conditions in January. Ten wells had groundwater levels in the normal range. Only two wells had above normal groundwater levels and they were in Kent and Wicomico Counties.

A well in Kent County, Maryland had above normal groundwater levels for the fourth consecutive month and it was the one of two sites with above normal groundwater levels in January. The groundwater level was also above normal in a well in Wicomico County.



The groundwater level in well CL Ad 47 in Carroll County, Maryland was at a monthly record low for the second consecutive month in January. New monthly low groundwater records were set 5 times in 2010 at this well and this is the only well in the region with a record monthly low in January. Groundwater levels in well CL Ec 75 in Carroll County and MO Eh 20 in Montgomery County were in the lowest 10th percentile. The 5-year hydrograph shows the water level as a dark line and the normal range (between the 25th and 74th percentiles) as a white band based on the period of record (1985 to present).



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

Reservoir Levels

At the end of January, storage in the Baltimore reservoirs (Loch Raven, Liberty, and Prettyboy) decreased by 2 percent to 85 percent of available storage capacity, with 64.39 billion gallons in available storage.

The Triadelphia and Duckett Reservoirs, which serve Howard, Montgomery, and Prince George's Counties, were an average of 74 percent of normal storage capacity, with 7.83 billion gallons at the end of January 2011.

January 2011	Percent available/normal storage	Volume (billion gallons)	Source
Baltimore Reservoirs			Baltimore City – Environmental Services Division
Liberty	82%	30.09	
Loch Raven	91%	19.20	
Prettyboy	85%	15.10	
Total	85%	64.39	
Patuxent Reservoirs			Washington Suburban Sanitary Commission (WSSC)
Triadelphia	80%	4.49	
Duckett	67%	3.34	
Total	74%	7.83	