

USGS MD-DE-DC 2010 Water Conditions Summary

Streamflow and groundwater levels in wells used by the U.S. Geological Survey (USGS) to assess the response to climatic conditions in Maryland, Delaware, and the District of Columbia region were above normal for the first 3 months of 2010 and monthly record high streamflow levels were set at three streamgages and eight wells. For the remainder of the year, most of the water levels were normal. Over 2010, monthly streamflow and groundwater levels in the region were predominantly normal and evenly distributed between above normal and below normal levels.

Percentage of time compared to normal relative to historical data			
2010 Monthly	Above Normal	Normal	Below Normal
Streamflow	27%	49%	24%
Groundwater	27%	50%	23%

In 2010, there were a total of 12 record monthly **low** groundwater levels set in April, May, June, July, September, and December, and 8 monthly record **high** groundwater levels set in February, March, and April. April had both a record high and a record low groundwater level.

There were a total of five record high streamflows set in February, March, and October. The only streamgage with a record low was at the Pocomoke River in July 2010.

Precipitation at National Weather Service stations in Maryland and Delaware was below normal for about 6 months of the year. Precipitation was unusually high in March at Georgetown, Delaware and in September at Baltimore, Maryland due to one large event on September 30, 2010.

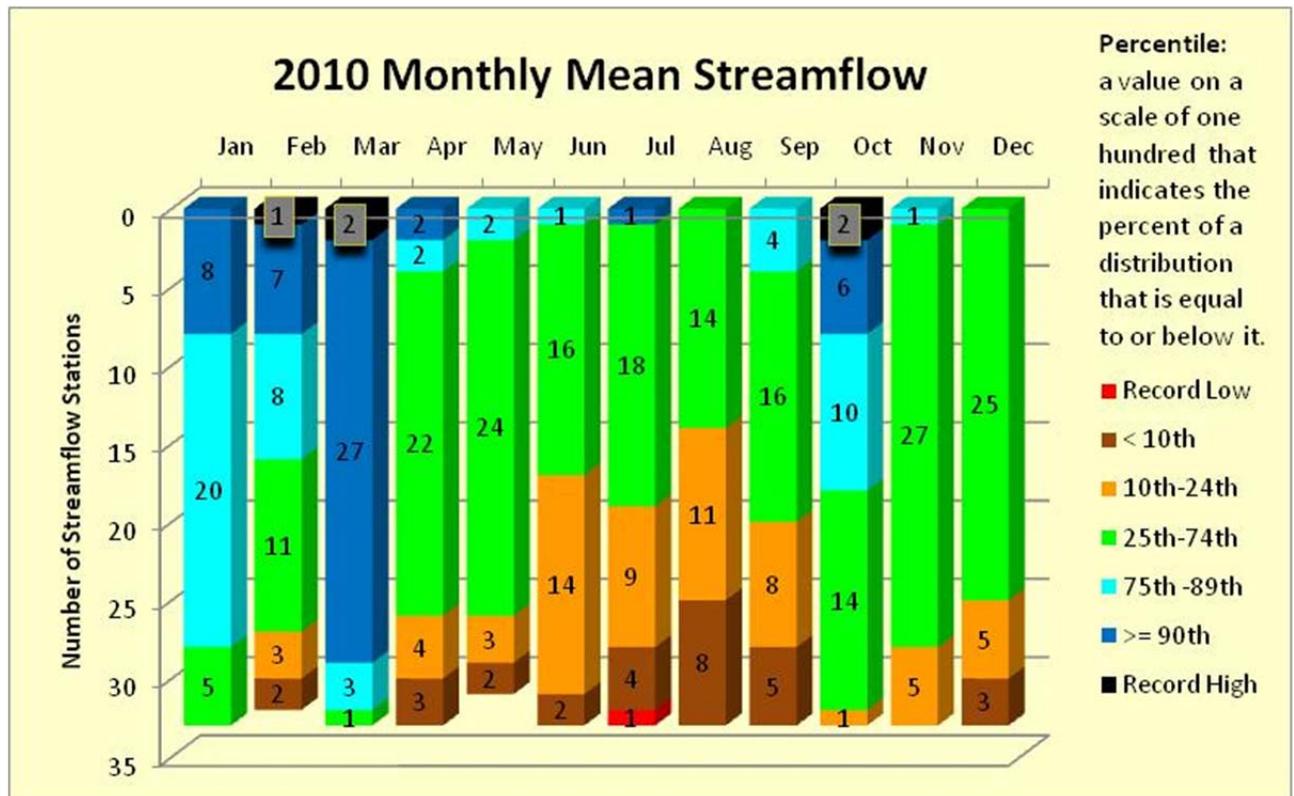
Reservoir levels for Baltimore and the District of Columbia were above 80 percent of available storage capacity all year and close to 100 percent of available storage capacity for the first 6 months of the year.

2010 Streamflow

In January and March 2010, monthly mean streamflow in Maryland, Delaware, and the District of Columbia was normal to above normal at all of the streamgages used by the USGS to assess climatic conditions. In February, streamflow at 84 percent of the sites was normal to above normal. In March, two new monthly record highs were set in Maryland on Sallie Harris Creek in Queen Anne's County and the Savage River in Garrett County.

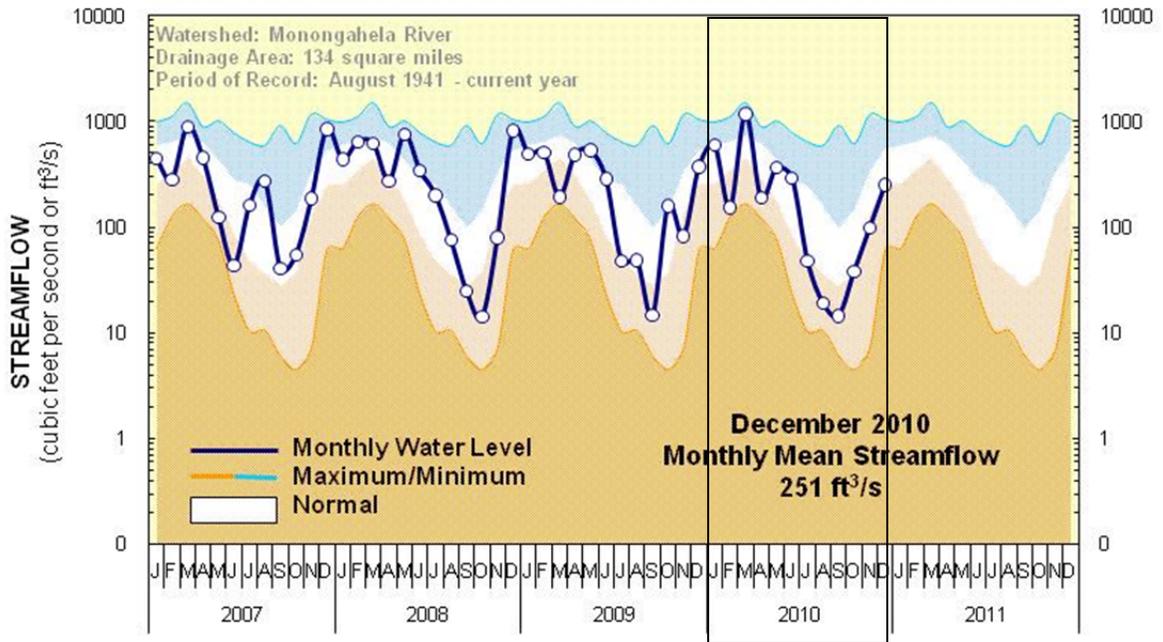
Streamflow was normal to above normal at 79 percent of the streamgages in April, but lack of rainfall caused the number of streams at normal to above normal levels to decrease to 51 percent in June. A record monthly low was set in July on the Pocomoke River, and 13 of the 33 stations were below normal. In August, there were no stations with above normal streamflow, resulting in the highest percentage of sites that were below normal for the year at 19 of 33 stations.

Unusually heavy rainfall at the end of September caused streamflow to rise, and record monthly streamflows were set on Morgan Creek and Sallie Harris Creek in Maryland. By November and continuing through December, streamflow was normal to above normal in more than 75 percent of the stations.





03075500 Youghiogheny River near Oakland
Garrett County, MD



Data from October 1, 2009 to present are provisional and subject to revision

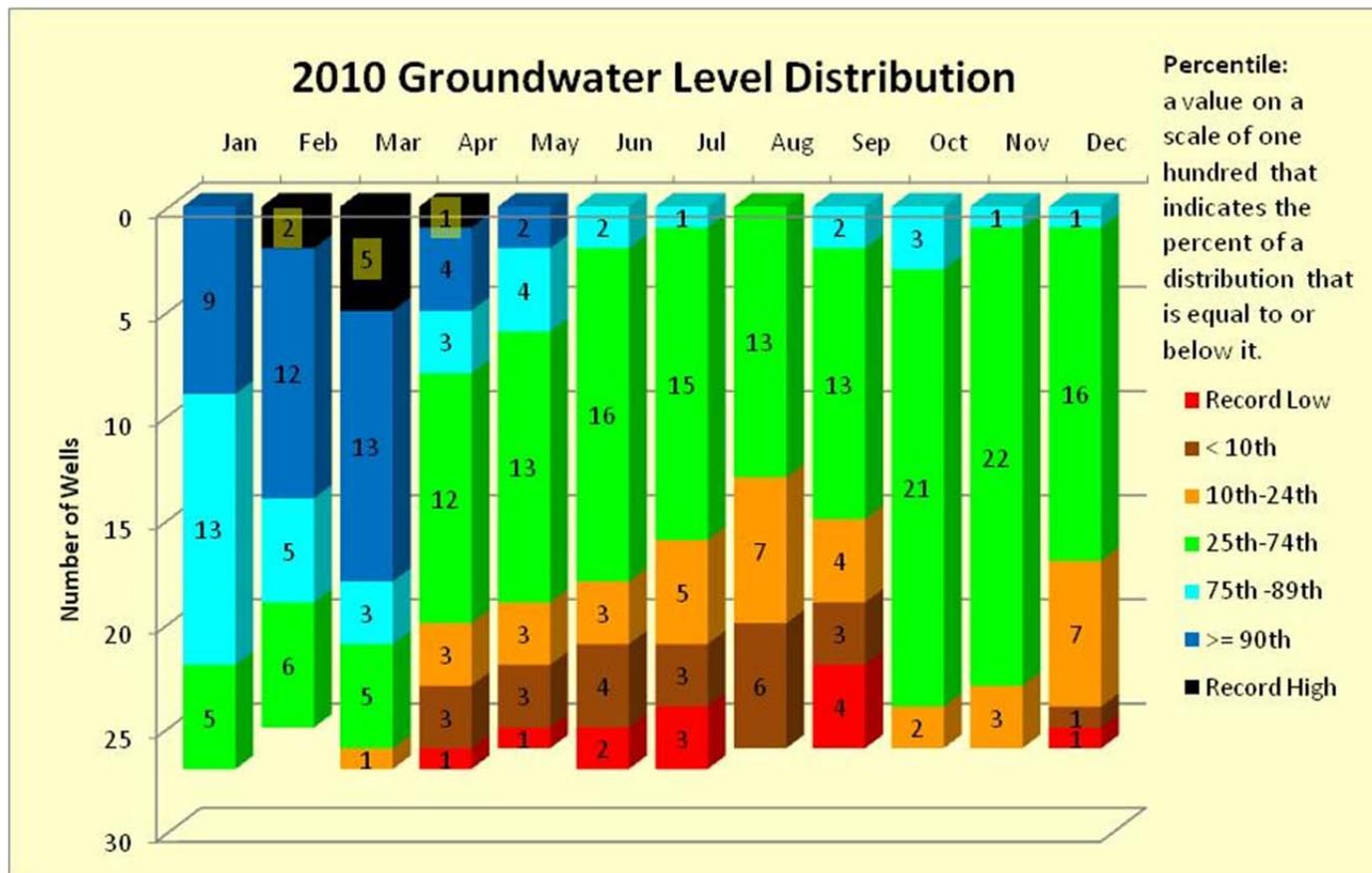
In 2010, monthly mean streamflow on the Youghiogheny River dropped from a near record high in March to below normal in the summer (see box). By September, streamflow followed the normal trend for the remainder of the year.

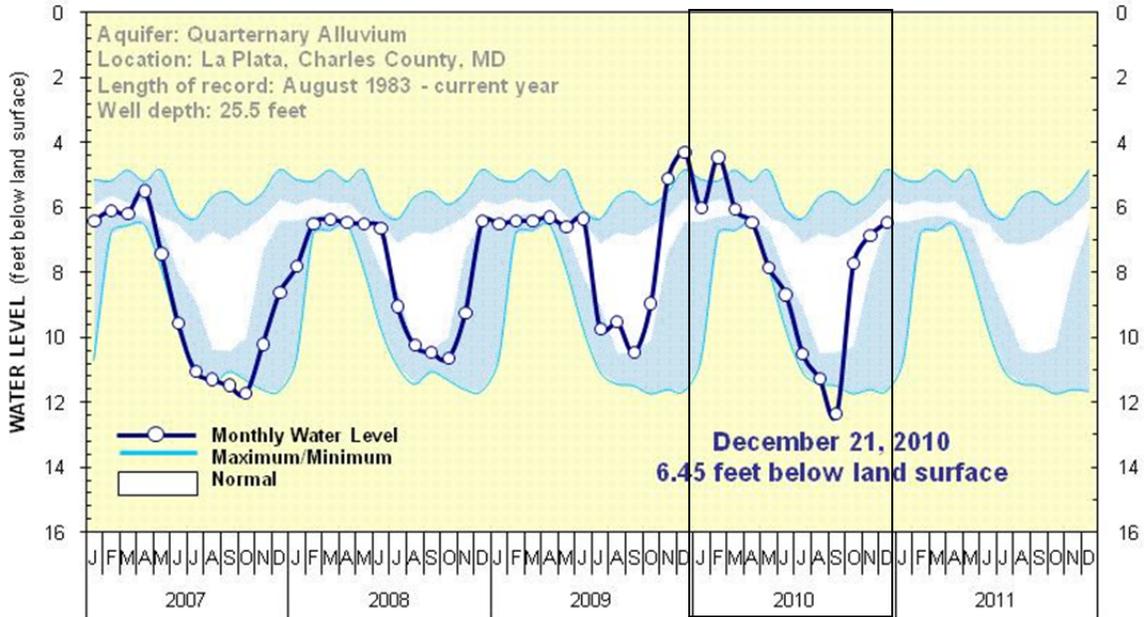
2010 Groundwater

In January and February 2010, groundwater levels were normal to above normal in all the wells used by the USGS to assess climatic conditions in Maryland, Delaware, and the District of Columbia. Monthly record high groundwater levels were set in eight wells in February, March, and April 2010, resulting from snowmelt from the record-setting snowfall. The records were set in Charles, Harford, Kent (twice), Washington, and Wicomico (twice) Counties in Maryland, and Kent County in Delaware. In April, there was a record monthly high in a well in Carroll County and a record monthly low in a well in Kent County, Maryland.

Lack of rainfall through the summer caused groundwater levels to drop and 11 record monthly lows were set from April to September. No monthly records were set in August. The record monthly lows were set in wells in Carroll (7 times), Charles, Frederick, and Wicomico (twice) Counties in Maryland.

At the end of September, rainfall was plentiful west of the Chesapeake Bay and many of the groundwater levels recovered and remained at normal levels for the rest of the year. The Carroll County region was the exception; in December, groundwater levels were at a record low in one well, and in the lowest 10th percentile in another well.



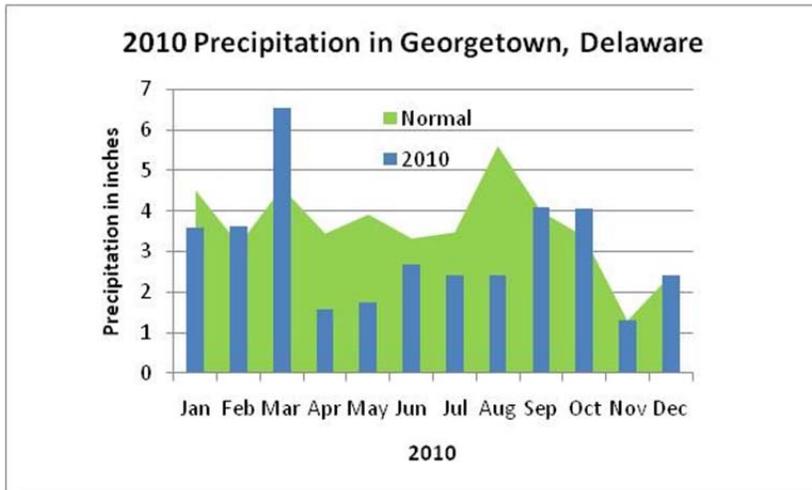


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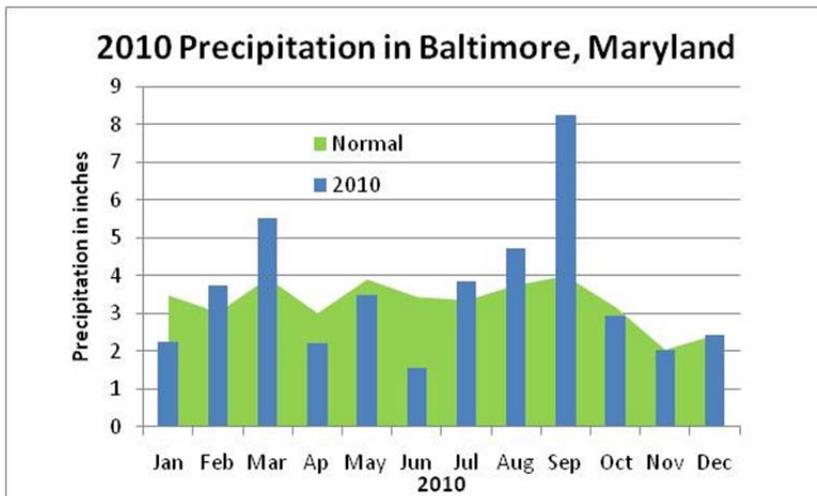
In 2010, well CH De 45 in Charles County, Maryland had a record high groundwater level in February, then below normal groundwater levels until it reached a record low in September (see box). Rainfall at the end of September helped raise the water level back to normal, and it currently remains at normal levels, following the standard trend.

2010 Precipitation

The following plots show 2010 precipitation plotted against the normal monthly precipitation at two National Weather Service stations. In Georgetown, Delaware, precipitation was below normal for 5 consecutive months from April through August, and only above normal in March and October.



At the National Weather Service station in Baltimore, Maryland, precipitation was below normal for half of the year. The largest amount of rainfall occurred in September when a nor'easter generated more than double the monthly rainfall in one event.



2010 Reservoir Levels

Reservoir levels for Baltimore, Maryland and the District of Columbia area were close to 100 percent of normal available storage capacity for the first half of the year. The lowest levels were in September, when the Baltimore reservoirs dropped to 85 percent and the District of Columbia reservoirs dropped to 76 percent of available storage capacity.