



# News Release

U.S. Department of the Interior  
U.S. Geological Survey

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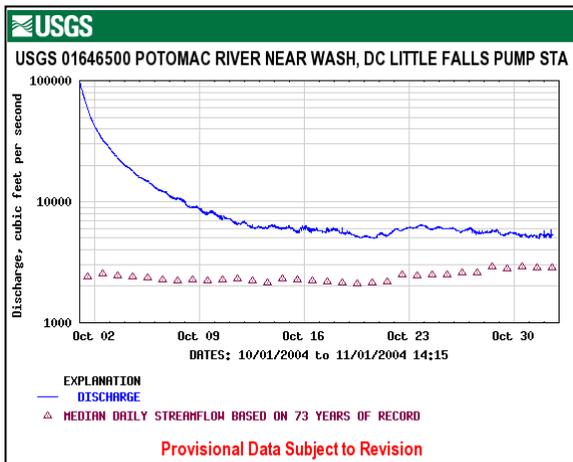
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## Dry October Causes Water Levels to Drop

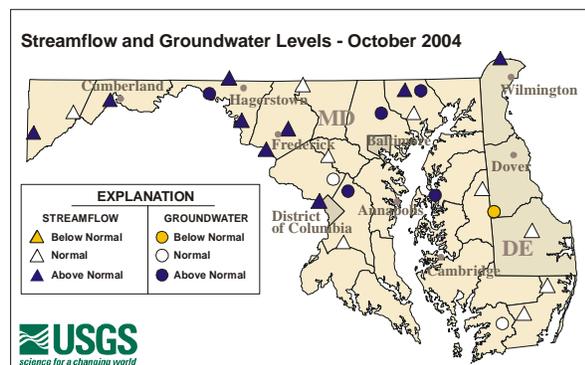
Below normal rainfall in October allowed water to drain and water levels dropped, following an abundance of rain in September. Many wells and streams remained above normal (see hydrograph below). Water levels in central and western Maryland, and northern Delaware, were at normal to above normal levels. In southern and eastern Maryland and most of Delaware, October water levels were normal to below normal, according to hydrologists at the U.S. Geological Survey (USGS). [Rainfall associated with hurricanes in September brought an abundance of rain to the watershed and raised water levels across the region.](#)



Streamflow, also called discharge, is measured in cubic feet per second and normal daily flow for that day is shown with a triangle. Streamflow statistics for the Potomac River near Washington, D.C. are based on 73 years of data. At the beginning of October, streamflow was more than 13 times higher than the normal daily flow. During October, streamflow levels dropped and by the end of the month, flow remained twice the normal daily flow. Water data can be viewed at <http://waterdata.usgs.gov/nwis/>.

### Status of Streams and Wells

The map to the right shows the location and status of wells and streams used by the USGS to monitor water conditions in Maryland, Delaware, and Washington, D.C. for October 2004. Water levels were normal to above normal in Maryland, but were normal to below normal on the Delmarva Peninsula.



## Precipitation

October rainfall was only about half the normal monthly amount across Maryland, Delaware, and Washington, D.C. according to preliminary rainfall data from the National Weather Service.

## Chesapeake Bay

Monthly mean streamflow into the Chesapeake Bay during October averaged 44.8 bgd (billion gallons per day), which is 61 percent above normal and 4 times lower than September, which was at a record-setting high. Normal flow for October is 27.9 bgd. High flows in October continue a 4-month sequence of high flows, which brings high amounts of nutrients and sediment to the Bay.

The Susquehanna, Potomac, and James Rivers are the largest rivers in the Chesapeake Bay watershed and usually contribute about 85 percent of the freshwater streamflow to the Bay. In an average year, approximately 50 percent of the freshwater flow comes from the Susquehanna River, 20 percent from the Potomac River, and 15 percent from the James River. The remaining 15 percent comes from surrounding tributaries and smaller streams. This October, freshwater entered the Bay was very close to average levels. Flow from the Susquehanna River was 49 percent, while the Potomac River contributed 20 percent, the James Rivers contributed 14 percent, and remainder from other sources was 17 percent. More information about USGS studies to help with the protection and restoration of the Chesapeake Bay and its watershed can be found at <http://chesapeake.usgs.gov>.

## Streamflow

Below normal rainfall across the region allowed streamflow levels in Maryland and Delaware to dropped from their high September levels, however many streams remain above normal. Water levels on the Delmarva Peninsula were normal. Current and historical streamflow data can be monitored on the web at: <http://waterdata.usgs.gov/>. Five-year monthly streamflow hydrographs from the USGS stream-gaging network can be viewed on the USGS website at: <http://md.water.usgs.gov/surfacewater/streamflow/>

Daily streamflow on the Potomac River near Washington, D.C. averaged 7.1 bgd in October, which is 250 percent above normal for the month of October. More information on the Potomac River is available at: <http://md.water.usgs.gov/monthly/poto.html>.

## Groundwater-Unconfined or Shallow Aquifers

Groundwater levels ranged from above normal to below normal during October in wells used by the USGS to monitor unconfined or shallow aquifer response to climatic conditions in the Maryland, Delaware, and Washington, D.C. region. Groundwater levels in the Piedmont region are normal to above normal, while the water level at the monitoring well on the Delmarva Peninsula is below normal. For 5-year hydrographs of groundwater levels for the climatic indicator wells, visit: <http://md.water.usgs.gov/groundwater/>.

## Groundwater-Confined or Deep Aquifers

Water levels in the deep confined aquifers continue to decline because the wells are pumped at higher rates than the rate at which deep groundwater is recharged. Because confined aquifers are deep, water levels in confined aquifers respond slowly to climatic conditions. The network of confined aquifer wells has been reduced because of diminishing funds. Several wells will no longer be measured on a monthly basis, and the web pages will be updated when data is collected. Limited data for confined aquifer wells can be viewed at: <http://md.water.usgs.gov/groundwater>. Real-time water-level data can be viewed at: <http://waterdata.usgs.gov/md/nwis/gw>.

## Reservoir Storage

Storage of the Baltimore reservoir system rose 1 percent, to 98 percent of capacity in October. The Baltimore reservoirs (Loch Raven, Liberty, and Prettyboy) have been nearly full since May 2003. Storage in the Triadelphia and Duckett Reservoirs on the Patuxent River, which serve Montgomery and Prince Georges Counties, dropped 5 percent to 80 percent of capacity in October.

## Water Monitoring

The USGS has been collecting National streamflow data for 120 years, since 1884. Streamflow monitoring began in Maryland on the Potomac River at Point of Rocks, Maryland in 1895 and continues today. Streamflow and groundwater levels are used to assess current water conditions and can be used to predict the potential for flooding and drought conditions. These USGS data have been provided to State and local water resource managers and are critical for making appropriate decisions on water regulation. For more information on streamflow and groundwater levels in Maryland, Delaware, and the District of Columbia, visit Water Watch at: <http://md.water.usgs.gov/waterwatch/>.

The real-time streamflow stations used in this analysis are operated in cooperation with the Maryland and Delaware Geological Surveys, the Maryland State Highway Administration, the U.S. Army Corps of Engineers, the Maryland Department of Natural Resources, the Maryland Department of the Environment, Baltimore County, Baltimore City, and other agencies. The long-term observation wells used in this analysis are operated in cooperation with the Maryland and Delaware Geological Surveys and the Interstate Commission on the Potomac River Basin. The real-time wells are operated in cooperation with the Maryland and Delaware Geological Surveys, the Interstate Commission on the Potomac River Basin, and Calvert County, Maryland. The USGS publishes data for 137 streamflow stations, 393 observation wells, and 4 springs across Delaware, Maryland, and the District of Columbia.

The USGS, a Bureau within the Department of the Interior, has served the Nation and the world for 125 years by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; to make important decisions and enhance and protect our quality of life.

\* \* \* USGS \* \* \*