



News Release

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

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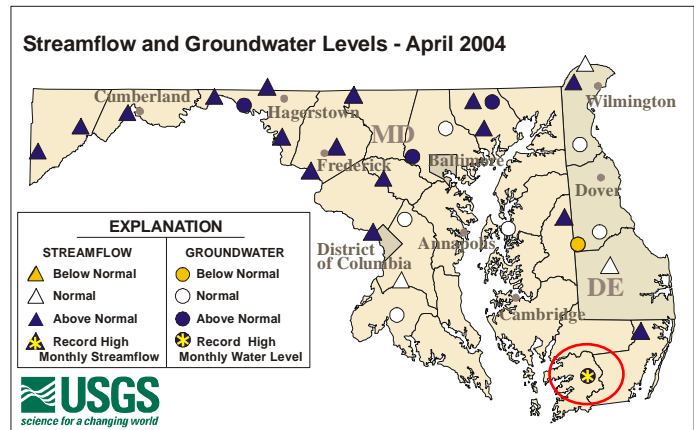
Streams Rise to Above Normal Levels in Maryland

Above normal rainfall in April caused streamflow and groundwater levels to rise, and many water levels were at above normal levels in Maryland, according to hydrologists at the U.S. Geological Survey (USGS). Water levels in streams and wells in Delaware continued their downward trend and ranged from below normal to above normal. Groundwater levels typically begin to decrease this time of year because trees and plants use groundwater.

Status of Streams and Wells

The map to the right shows the location of the wells and streams used by the USGS to monitor water conditions in Maryland, Delaware, and the District of Columbia. In April, abundant rainfall caused most streams in Maryland to be above normal levels (dark triangles). Streams in Delaware were normal (white triangles) to above normal.

Several days of heavy rain caused the water-table well in Somerset County, Maryland to reach the highest April level in 40 years (well shown with asterisk).



Precipitation

April was the first month this year with above normal precipitation, totaling 5.33 inches (2.33 inches above normal) for Baltimore, according to the National Weather Service. Water levels in many streams and wells responded to the abundant precipitation and were at above normal levels.

Chesapeake Bay

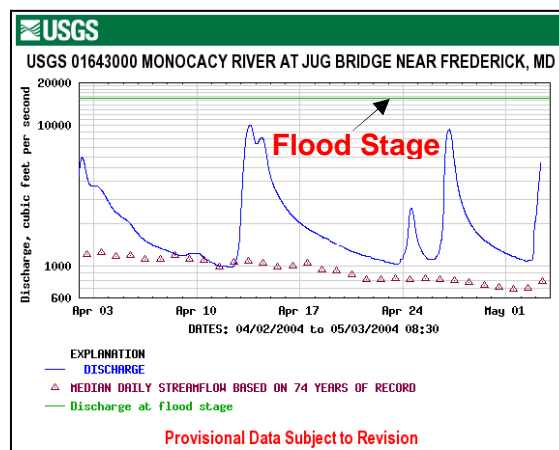
Monthly mean streamflow into the Chesapeake Bay during April averaged 101.6 bgd (billion gallons per day), which is 10 percent above normal. More information about USGS studies to help with the protection and restoration of the Chesapeake Bay and its watershed can be found at <http://chesapeake.usgs.gov>.

Streamflow

Most streams in Maryland were flowing above normal levels in April. Streams in Delaware ranged from normal to above normal. The hydrograph of streamflow on the Monocacy River at Jug Bridge near Frederick, Maryland, to the right shows that the river rose several times in April but never reached flood stage. 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 21.0 bgd in April, which is 96 percent above normal for the month of April. More information on the Potomac River is available at: <http://md.water.usgs.gov/monthly/poto.html>



Groundwater-Unconfined or Shallow Aquifers

Groundwater levels in the wells used by the USGS to monitor unconfined or shallow aquifer response to climatic conditions in the bi-state region ranged from normal to above normal levels during April. Water levels rose in most of the wells, and in Somerset County, Maryland, the April water level was at a 40-year high. There had been several days of heavy rainfall just prior to the measurement. For 5-year hydrographs of groundwater levels for the climatic indicator wells, visit: <http://md.water.usgs.gov/groundwater/>.

Groundwater-Confined or Deep Aquifers

Although water is plentiful at the surface (streams, reservoirs, and shallow groundwater reserves are full), some of the water levels in the deep confined aquifers used for water supply by many people living in southern and eastern Maryland and Delaware continue to decline. The decline is caused by pumping at greater rates than the rate at which deep groundwater is recharged, and because the confined aquifers are deep, water levels in confined aquifers take longer to respond to climatic conditions than water levels in shallow aquifers. Confined aquifer wells are measured monthly and can be viewed at <http://md.water.usgs.gov/groundwater>. Four wells, including one drilled in March 2004 in the confined Aquia aquifer in Calvert County, Maryland, have real-time water-level data collection and can be viewed at: <http://waterdata.usgs.gov/md/nwis/gw>

Reservoir Storage

Contents of the Baltimore reservoir system remained at 100 percent capacity. Storage in the Triadelphia and Duckett Reservoirs on the Patuxent River, which serves Montgomery and Prince Georges Counties, has increased 7 percent to 99 percent of capacity.

Water Monitoring

The USGS has been collecting national streamflow data for 120 years, since 1884. Streamflow monitoring began on the Potomac River at Point of Rocks, Maryland in 1895 and continues today. Streamflow and groundwater levels are used to assess the 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 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 and 389 observation wells across Delaware, Maryland, and the District of Columbia.

Recently Released USGS Reports

The USGS Maryland, Delaware, and D.C. District recently published two reports highlighting recent scientific work done by this office. These reports and other publications are available online from the Publications section of the District homepage at: <http://md.water.usgs.gov/publications/online.html>.

The short fact sheet titled [The U.S. Geological Survey in Maryland, Delaware, and Washington, D.C. \(FS 2004-3004\)](#) includes information on water resources, water quality, Chesapeake Bay, and urban issues regarding water, in addition to information on geography, geology, and biological resources.

The USGS report titled [Selected Applications of Hydrologic Science and Research in Maryland, Delaware, and Washington, D.C., 2001-2003 \(FS 126-03\)](#) describes hydrologic science and research including real-time data transmission, continuous water-quality monitoring, Hoverprobe drilling, thermal-infrared imaging, passive-diffusion-bag samplers, hydroacoustic techniques, wastewater analysis, sediment source identification, water-use data analysis, and borehole geophysics.

The USGS serves the Nation 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; and enhance and protect our quality of life.

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