News Release

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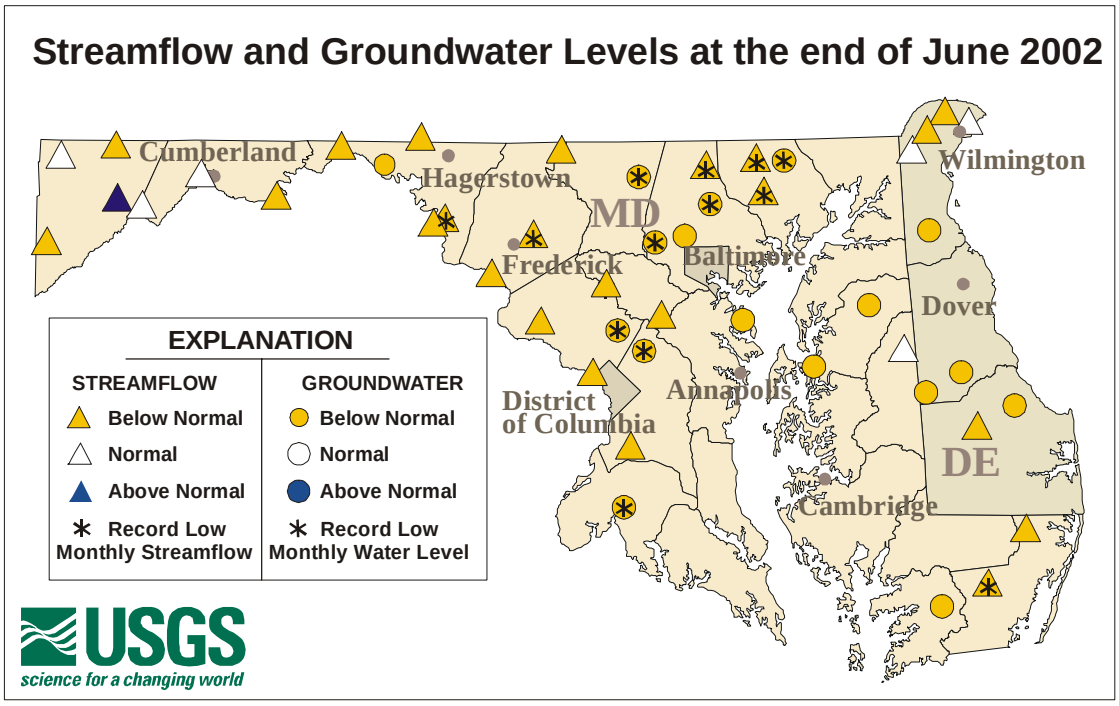
Record Low Water Levels Show the Effects of Long-Term Hydrologic Drought

Streamflow and groundwater levels are showing the effects of the hydrologic drought that the region has been experiencing for at least 10 months. At the end of June, record low 7-day streamflows were set at 6 sites, and more than 80 percent of the real-time streamflow stations used to monitor drought across Maryland and Delaware had below-normal streamflow at the end of the month. Groundwater levels continue to reflect the long-term effects of the drought. Groundwater levels were below normal near month's end at all of the 17 wells used for drought analysis in Maryland and Delaware, according to hydrologists at the U.S. Geological Survey (USGS). Seven of these wells set record low groundwater levels for June (see graphs at http://md.water.usgs.gov/groundwater/).



For news release and images, go to http://md.water.usgs.gov/publications/press_release/2002/current/

Groundwater level data from the historic drought of the1960s were compared with the recent water level data, which includes data during the drought of 1999. Current groundwater levels are lower in most wells than during the drought of 1999 and the 1960s. These hydrographs can be viewed from the groundwater section of the drought website: http://md.water.usgs.gov/groundwater/comparison_plots.

The USGS drought monitoring well with the largest deficit from normal is in Carroll County, Maryland. The groundwater level at this well is 9.64 feet below normal for June, breaking the previous record set in 1992 by 3.18 feet. The well in Harford County, Maryland, is 7.74 feet below normal for June, and has exceeded the previous record low set in June 1963 by 4.01 feet.

Record low 7-day streamflow was observed at Antietam Creek, Deer Creek, Little Falls (Gunpowder), Monocacy River, Nassawango Creek, Piscataway Creek, and Winters Run. Average streamflow at Deer Creek in Harford County, Maryland, was the lowest monthly June flow for the period of record. This is the fifth consecutive month with record setting monthly low streamflow for Deer Creek. Real-time streamflow is monitored by the USGS across the Nation and can be viewed at: http://waterdata.usgs.gov/.

Abundant rainfall in the upper Susquehanna River watershed has led to normal flow in the Susquehanna River. The Susquehanna River typically contributes about 56 percent of the total flow into the Chesapeake Bay, yet in June, the Susquehanna River contributed 75 percent of the flow. Streamflow in the James River was the lowest June monthly flow for the period of record. The James River contributed only 3 percent of the flow to the Bay, while the Potomac River contributed 10 percent of the flow. Streamflow in the Potomac River declining steadily to 1.4 bgd (billion gallons per day) on June 30, showing the effects of the summer heat and lack of rainfall. The monthly flow for the Potomac River was less than half of the normal flow for June (see graphs at http://md.water.usgs.gov/monthly/bay.html). Total flow into the Chesapeake Bay during June averaged 40.6 bgd, which is 2 percent below average June flow into the Bay.

June rainfall varied widely across the bi-state area due to summer thunderstorms. Rainfall at Baltimore-Washington International (BWI) Airport was 1.04 inches below normal, while rainfall at Reagan Washington National Airport was reported 0.68 inches above normal, according to the National Weather Service. Storage in the Baltimore reservoir system remained at 62 percent of capacity (third consecutive month) in June. The Baltimore region has been supplementing the water supply with water from the Susquehanna River since the end of January. Near month's end, the contents of the Triadelphia and Duckett Reservoirs were at 67 percent of capacity.

Rainfall from scattered thunderstorms may temporarily raise streamflow levels, but most of the rainfall in the summer is used by plants or evaporates, resulting in minimal recharge to groundwater aquifers. The rapid decline in streamflows after a rainfall event is explained by the low groundwater storage. Streamflows in the summer normally are maintained by groundwater storage, which typically is highest in early spring, yet have been at record lows for months in central Maryland. Streamflow and groundwater levels reflect the long-term effects and severity of the hydrologic drought, and generally do not recover during the summer months.

Tracking streamflow and groundwater levels is essential to gauge drought severity and recovery. These USGS data have been provided to State and local water resource managers and are critical for making appropriate decisions on water restrictions. For more information on how the drought is affecting streamflow and groundwater levels in Maryland and Delaware, see Drought Watch at: http://md.water.usgs.gov/drought/. Please note that the streamflow and groundwater level data is provisional and subject to change.

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, and other agencies. The observation wells used in this analysis are operated in cooperation with the Maryland and Delaware Geological Surveys. The USGS publishes data for 128 streamflow stations and 379 wells across Maryland and Delaware.

The U.S. Geological Survey is the Nation's largest water, earth and biological science, and civilian mapping agency providing reliable, impartial scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, contribute to the sound conservation and the economic and physical development of the Nation's natural resources, and enhance the quality of life by monitoring water, biological, energy, and mineral resources.

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