News Release

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

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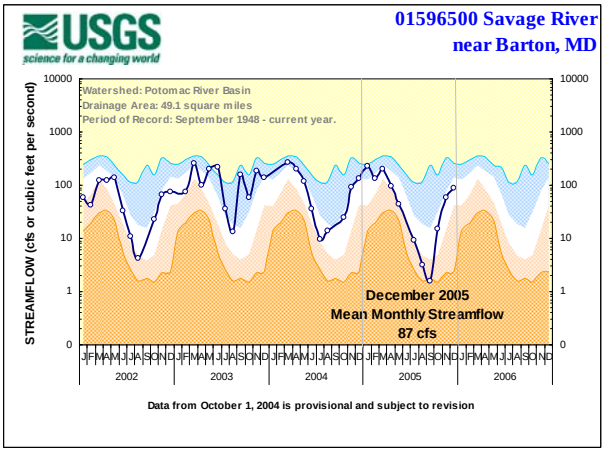
Water Resources Plentiful at End of December 2005;

Chesapeake Bay Flow Normal in 2005

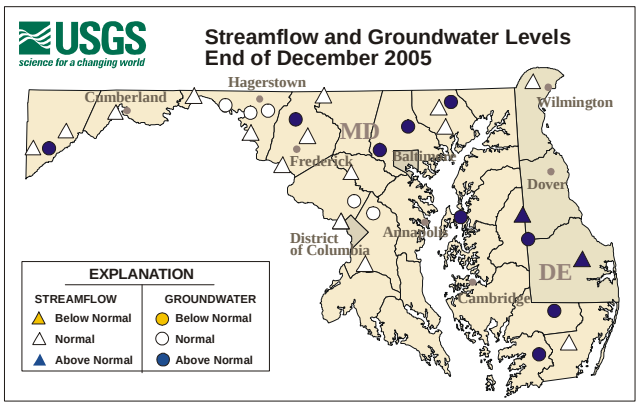
Water levels throughout Maryland, Delaware, and Washington, D.C. were normal to above normal at the end of December according to hydrologists at the U.S. Geological Survey (USGS). Most of the rivers were flowing at normal levels, while many of the wells were at above normal levels in December. Except for September 2005, water levels have been normal to above normal for the past 2 years. In the past 4 months, the region experienced the driest September on record including record-low streamflow on the Savage River, to the wettest October on record and flooding from intense rainfall over a 2-day period.



The 5-year hydrograph for the Savage River in western Maryland illustrates how streamflow responds to climatic conditions. Streamflow typically increases at this time of year when water demands from evapotranspiration (evaporation and water used by plants) are low. Monthly mean streamflow (shown as the dark line) changed from record-low levels during the dry September to normal levels (white band) in October, November, and December, when rainfall was normal or above. In October, the Hagerstown area received 5.07 inches of rain, while areas to the east in Maryland, Delaware, and Washington D.C. had more than twice the normal rainfall, which brought streams from below normal to normal levels.

Status of Streams and Wells

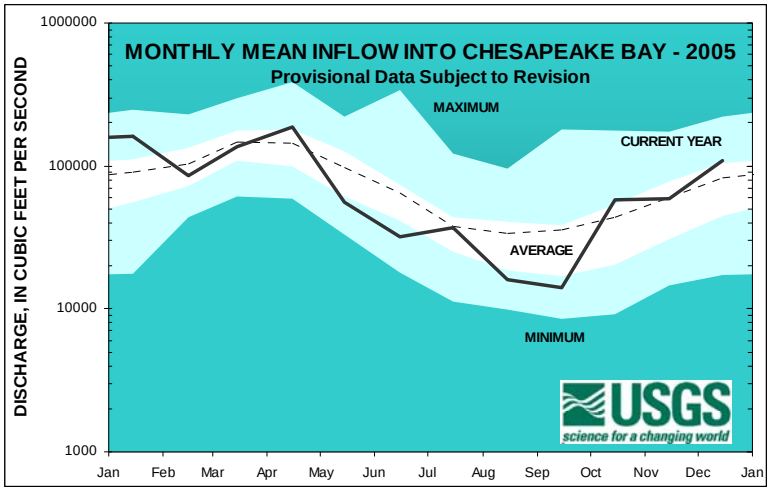
This map shows the location and status of wells and streams used by the USGS to monitor water levels in Maryland, Delaware, and Washington, D.C. at the end of December 2005. To view hydrographs for these sites, visit: http://md.water.usgs.gov/waterdata/



Streamflow levels are normal in central and western Maryland and above normal on the Delmarva Peninsula. Groundwater levels ranged from normal to above normal. Many of the streams and wells in western Maryland are normal, which reflects the drier conditions in that region.

Chesapeake Bay Flow

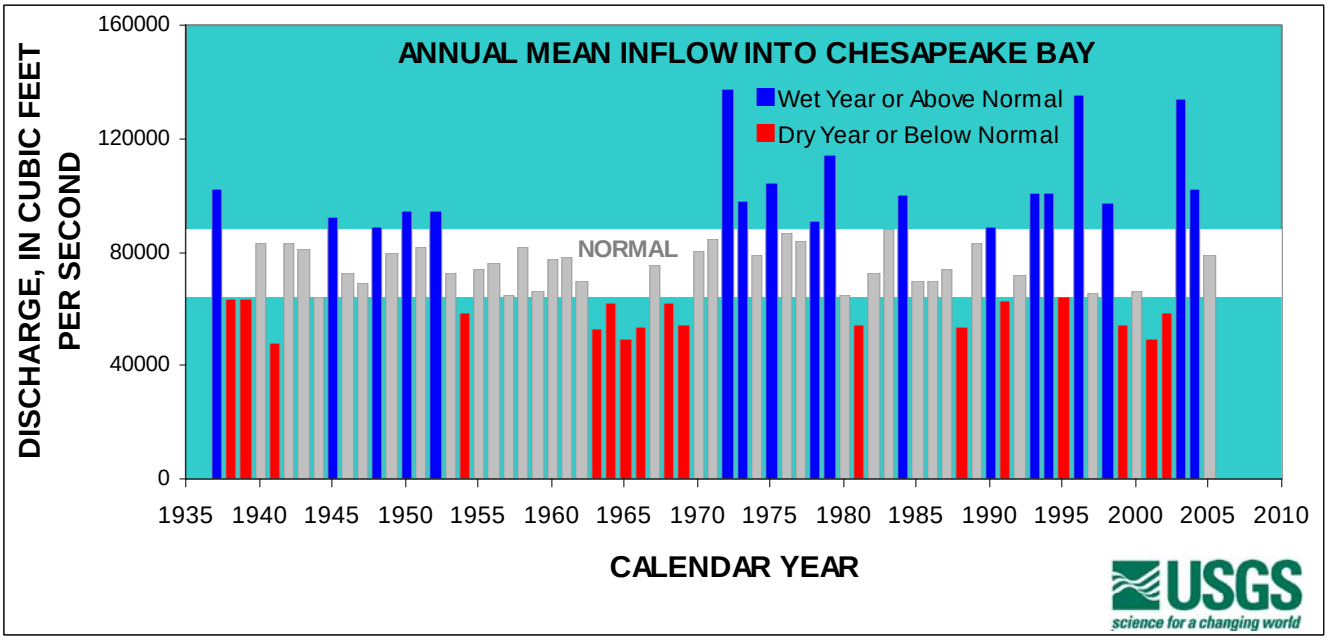
Monthly mean streamflow to the Chesapeake Bay averaged 70 bgd (billion gallons per day) for December, which was 32 percent above normal. Normal flow for December is 52.8 bgd. Abundant rainfall and runoff in October helped bring the flow to the Bay from below normal levels to above normal levels (see graph). Near normal rainfall in November and December helped keep the Bay flow at normal to above normal levels.



This graph shows monthly mean streamflow to the Chesapeake Bay for 2005. The white band shows the normal range of monthly mean flows, 1937-2003 (25th to 75th percentile). Darker shaded areas show the maximum and minimum monthly mean flows based on data from 1937-2003.

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 December, the amount of freshwater entering the Bay included higher than normal flow from tributaries. Flow from the Susquehanna River was 53 percent, while the Potomac River contributed 13 percent, the James River contributed 8 percent, and the remainder from other sources was 25 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.



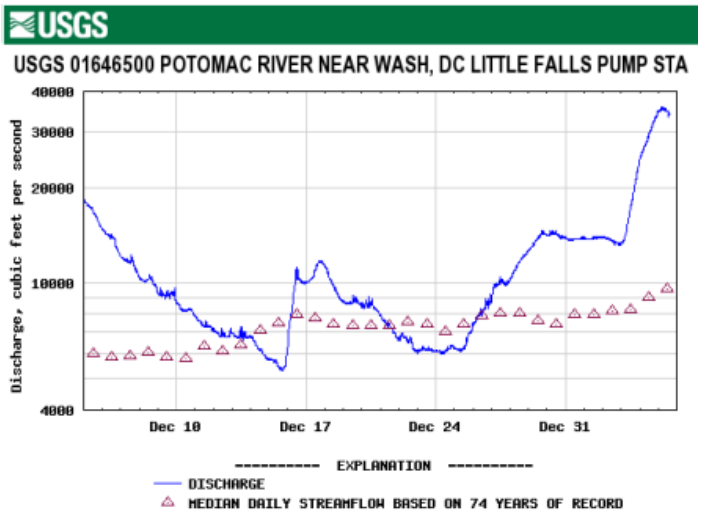
Annual freshwater flow to the Chesapeake Bay for 2005 was normal, and is shown as a gray bar within the white band. The white band in this graph shows normal range of annual mean flows for data from 1937-2003 (25th to 75th percentile). Flow in 2005 was normal for the first year since 2000. During 2001 and 2002, the flow was less than normal and in 2003 and 2004, the flow was above normal. This graph is available on the web at: http://md.water.usgs.gov/monthly/bay.html.

Streamflow

Streamflow levels were normal in most of the streams in the Delaware, Maryland, and Washington, D.C. region in December, and above normal in Delaware. During 2005, streamflow levels were at normal to above normal levels throughout the year, except during September when they reached below normal levels because of almost no rainfall. Current and historical streamflow data can be found on the web at: http://waterdata.usgs.gov/. Five-year monthly streamflow hydrographs from the USGS stream-gaging network can be viewed on the web at: http://md.water.usgs.gov/surfacewater/streamflow/.

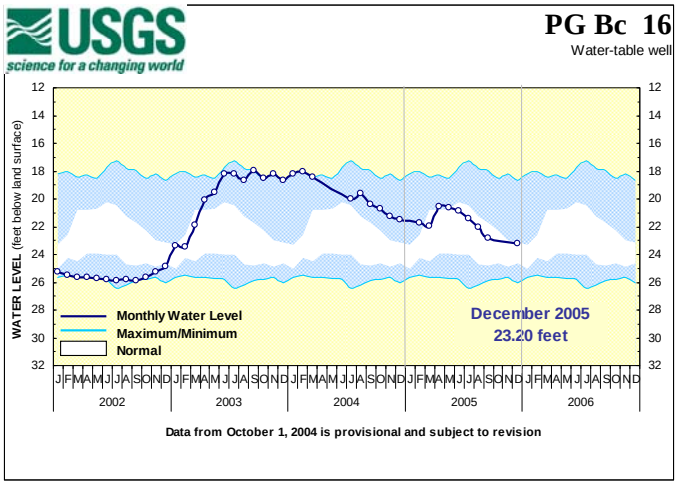
Daily streamflow for the Potomac River near Washington, D.C. averaged 9.3 bgd in December, which is 18 percent above normal. Normal December flow is 7.9 bgd. Real-time streamflow data for this station and thousands across the Nation are available at http://waterdata.usgs.gov/. The USGS provides access to water-resources data collected at approximately 1.5 million sites in all 50 States, the District of Columbia, and Puerto Rico.

Streamflow data, also called discharge data, is collected every 15 minutes at the Potomac River near Washington, D.C. The triangles represent the normal flow for that day. The graph shows normal fluctuations due to rainfall events and intervening dry periods.



Groundwater

Groundwater levels in wells used by the USGS to monitor unconfined or shallow aquifer response to climatic conditions in Maryland and Delaware were at normal to above normal levels throughout the region in December. During 2005, water levels in these wells were at normal to above normal levels.



This 5-year hydrograph shows groundwater levels for a well in Prince Georges County, Maryland. Water level is shown in depth below land surface. The water level (dark line) has been normal to above normal since the fall of 2002, and in the normal range for the past 8 months. Hydrographs for selected wells can be viewed at: http://md.water.usgs.gov/groundwater/.

Precipitation

December rainfall was near normal throughout most of Maryland, Delaware, and Washington, D.C. with more than 3 inches of rain at BWI Airport (3.90 inches), Reagan National Airport (3.34 inches), Wilmington (3.26 inches), and Georgetown (3.31 inches). Rainfall in Hagerstown, however, was only 1.56 inches, according to preliminary rainfall data from the National Weather Service (NWS).

September 2005 was a record-setting dry month and streamflow levels were below normal. October 2005 was the wettest month on record in Maryland and Washington D.C. with 9.23 inches at BWI and 9.41 inches at Reagan National Airport. Delaware also experienced more than double normal rainfall in October. The abundance of water resulted from a rainfall event at the beginning of the month. The ground was dry and compact from the previous month of little rainfall and the intense rain quickly led to flooding in low-lying areas. Annual rainfall for 2005 was normal for the region, with less rainfall in western Maryland (Source: NWS Middle Atlantic River Forecast Center).

Reservoir Storage

Storage in the Baltimore reservoir system rose 11 percent to about 98 percent of capacity at the end of December. The Baltimore reservoirs (Loch Raven, Liberty, and Prettyboy) had been nearly full since May 2003. The Triadelphia and Duckett Reservoirs on the Patuxent River, which serve Montgomery and Prince Georges Counties, increased 4 percent to 76 percent of capacity at the end of December.

U.S. Geological Survey

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 Washington, D.C., visit Water Watch at: http://md.water.usgs.gov/waterwatch/.

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; and make important decisions to enhance and protect our quality of life.

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