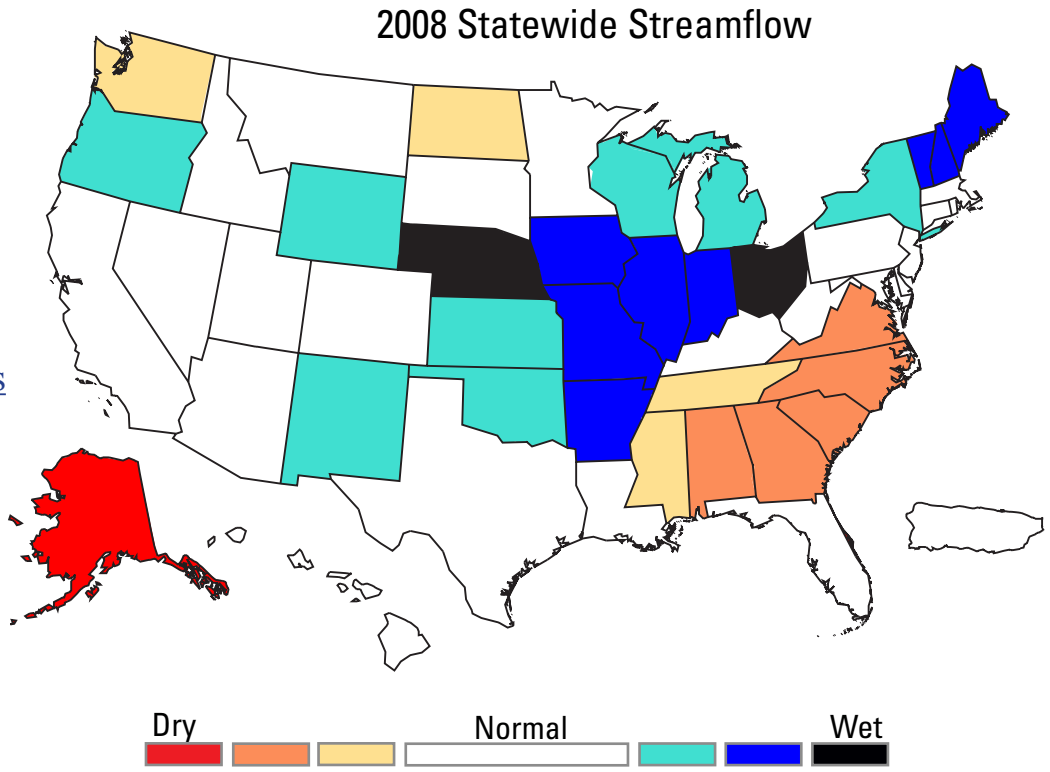
Streamflow of 2008 – Water Year Summary

U.S. Geological Survey
Reston, Virginia

January 2009



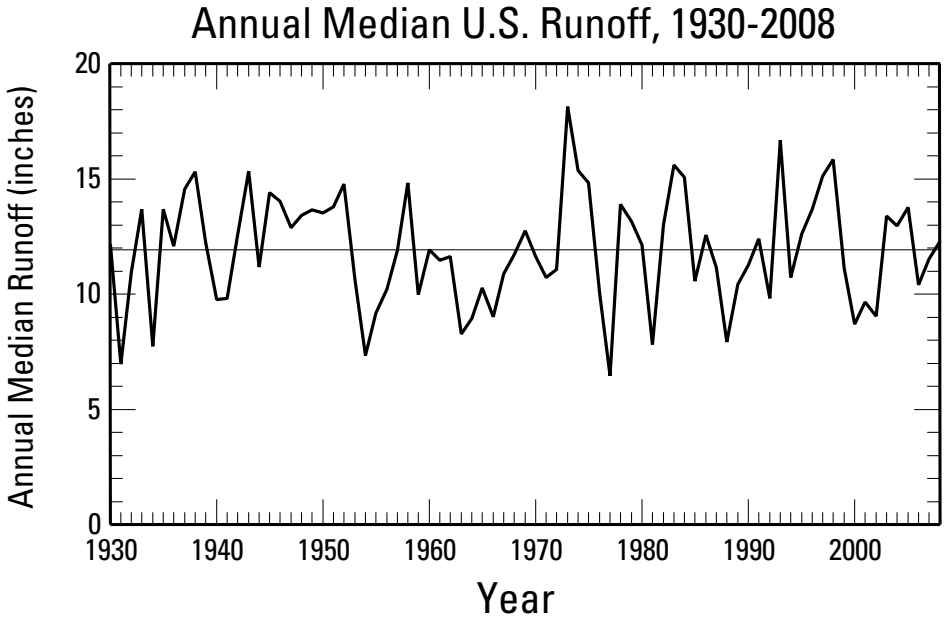
Introduction

The maps and graphs appearing in this summary describe streamflow conditions for water-year 2008 (October 1, 2007 to September 30, 2008) in the context of the 79-year period 1930-2008, unless otherwise noted. The illustrations are based on observed data from the U.S. Geological Survey's (USGS) National Streamflow Information Program. The period 1930-2008 was used because prior to 1930, the number of streamgages was too small to provide representative data for computing statistics for most regions of the country.

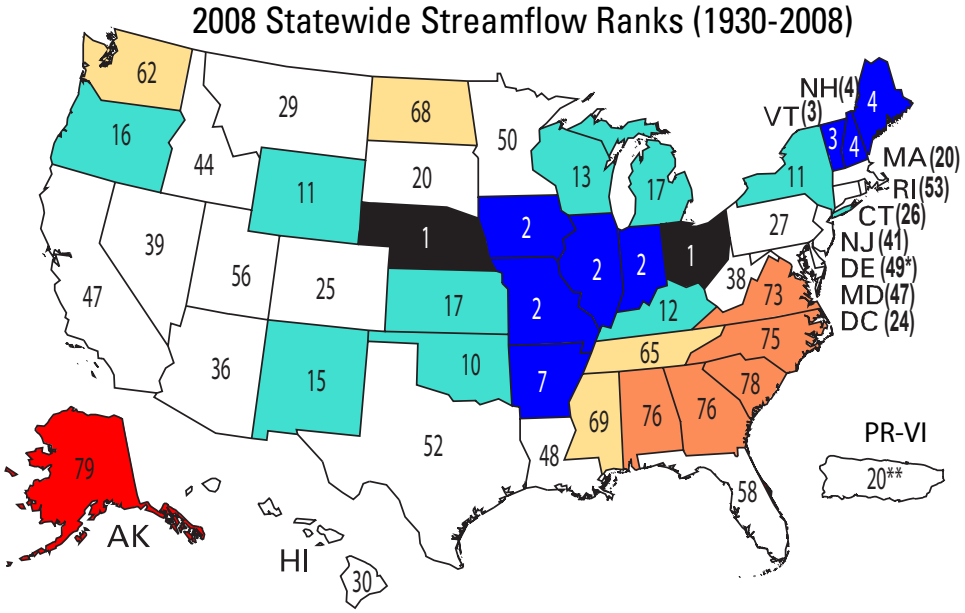
In the summary, reference is made to the term "runoff," which is the depth to which a river basin, State, or other geographic area would be covered with water if all the streamflow within the area during a single year was uniformly distributed upon it. Runoff quantifies the magnitude of water flowing through the Nation's rivers and streams in measurement units that can be compared from one area to another. The runoff value for a geographic area is computed as the median runoff value for all streamgages in that geographic area. For example, the runoff value for a state is the median for all streamgages in that state, and the median for the Nation is the median value for all streamgages in the Nation.

Each of the maps and graphs below can be expanded to a larger view by clicking on the image. In all the graphics, a rank of 1 indicates the highest flow of all years analyzed.

National Overview



Runoff in the Nation's rivers and streams during 2008 (12.31 inches) was slightly above the long-term annual median for the United States (11.94 inches). Nationwide, 2008 streamflow ranked 35th out of the 79 years in the period 1930-2008.

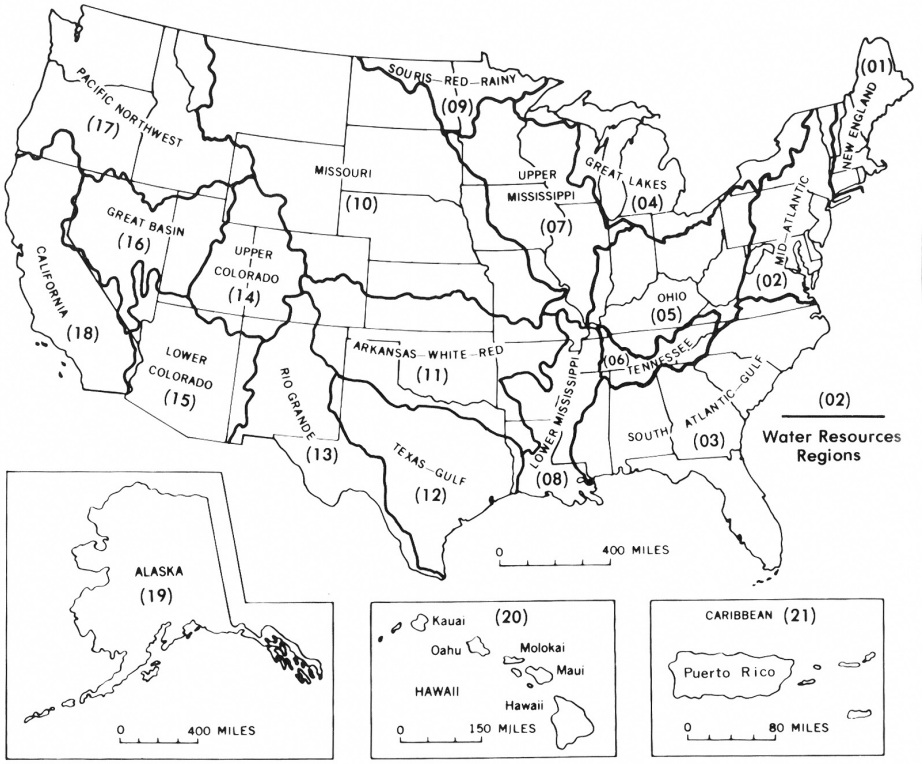


Above normal streamflow characterized the Central Plains, the Upper Ohio Valley, and most of the Northeastern states. Nebraska and Ohio experiences their highest annual streamflow for any year since 1930. Below normal streamflow was prevalent in the Southeast and in Alaska. Alaska report its lowest annual streamflow for the second consecutive year.

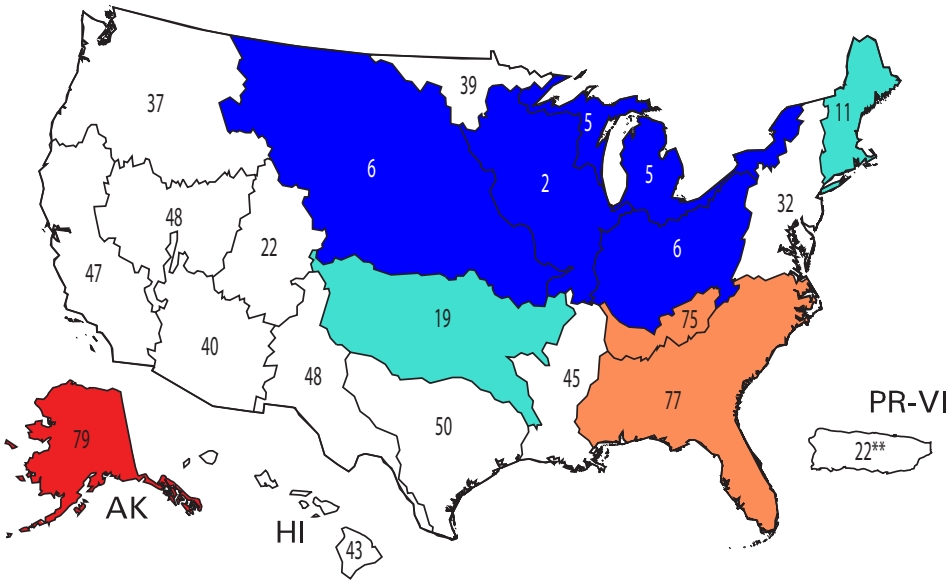
* Out of 70 years of historical data.
** Out of 65 years of historical data.

Explanation - Rank						
79	73-78	61-72	20-60	8-19	2-7	1
Lowest	Much below normal	Below normal	Normal	Above normal	Much above normal	Highest

Regional Patterns



The United States (including Puerto Rico) is divided into 21 large drainages, or water resources regions. These hydrologic areas are based on surface topography and contain either the drainage area of a major river, such as the Columbia, the combined drainage areas of a series of rivers, such as the Texas-Gulf region which includes a number of rivers draining into the Gulf of Mexico, or the area of an island or island group. Water resources regions provide a coherent, watershed-based framework for depicting streamflow variations.



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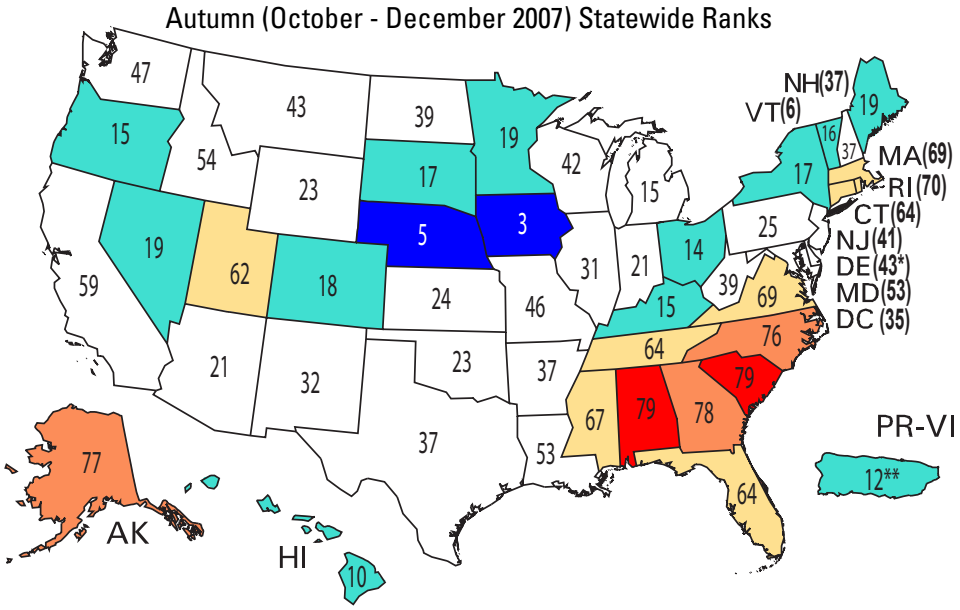
In water year 2008, notable regional streamflow differences were observed among hydrologic units in the western, central, and eastern United States. Alaska experienced its lowest annual flow since 1930, breaking the previous record low set in 2007. Much below normal streamflows occurred across most of the South Atlantic-Gulf and Tennessee regions. In contrast, the water resources regions of the Central U.S. (Missouri, Upper Mississippi, Great Lakes, and Ohio basins) were much above normal, and the Arkansas-White-Red and New England basins were above normal.

Seasonal Characteristics



Autumn season (October-December) streamflow was in the normal range nationwide (ranking 47th in 79 years). Although much above normal flows occurred in Nebraska and Iowa, new record low autumn flows occurred in Alabama and South Carolina.

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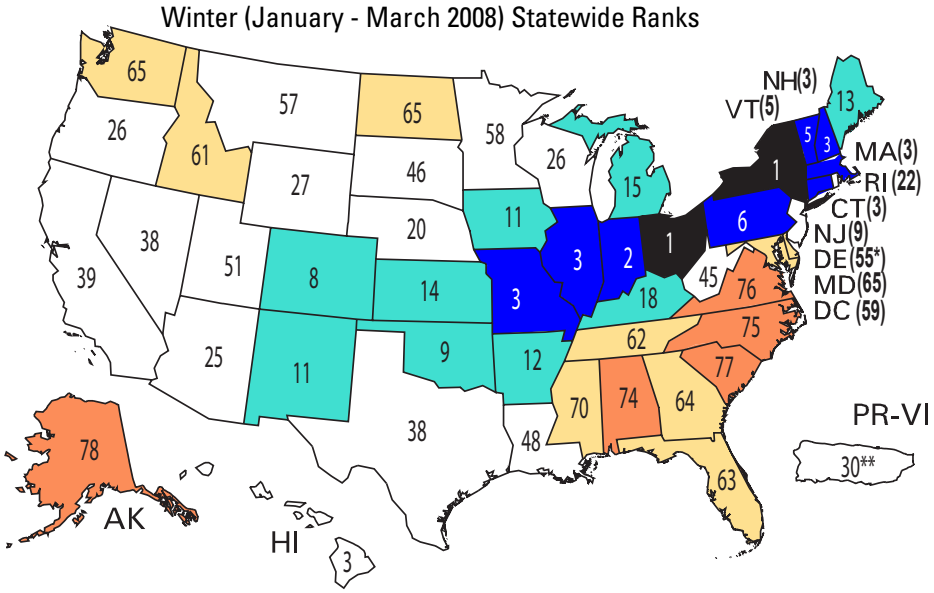

Winter season (January-March) saw above normal to much above normal streamflow from the southern foothills of the Rocky Mountains northeastward into New England, with new winter record high flows occurring in Ohio and New York. Below normal conditions continued to characterize states in the Southeast and in Alaska. Nationwide, the winter season ranked 27th out of 79 years.

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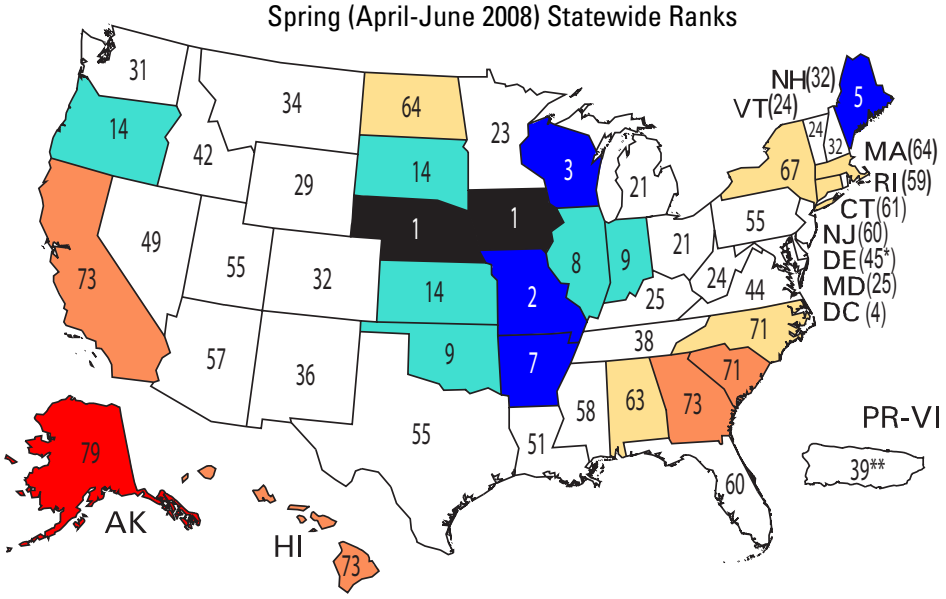
Spring (April-June 2008) Statewide Ranks



Spring season (April-June) streamflow increased in several states across the Central Plains, with Nebraska and Iowa having new record highs for the season. Below normal flows continued in several southeastern states, though at more moderate levels than during the winter. Flows in Alaska, however, declined to new record low levels for the season. Nationwide, spring streamflows ranked 35th for the 79 years.

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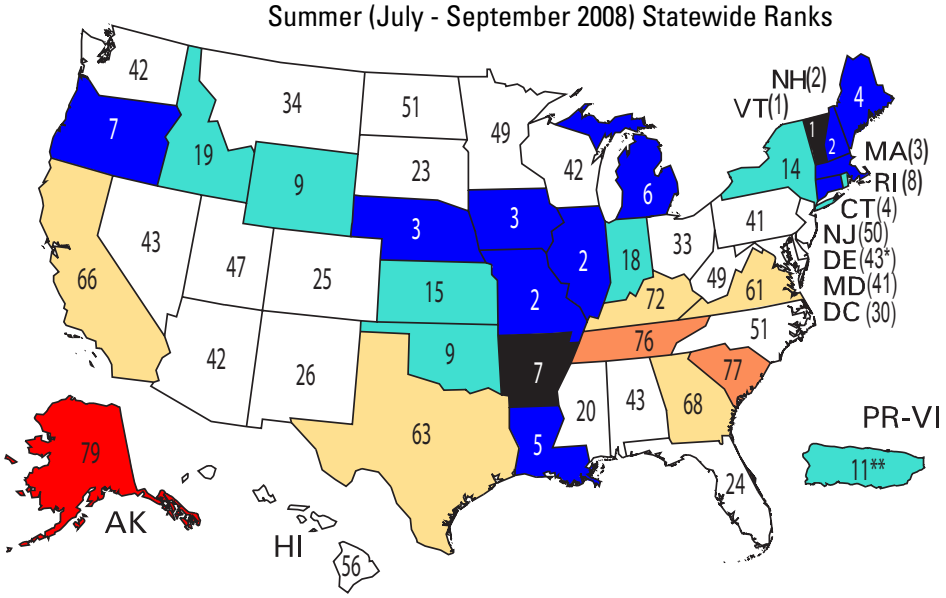
** Out of 65 years of historical data.

Summer (July - September 2008) Statewide Ranks



Summer season (July-September) streamflow was in the above normal range for the U.S., ranking 13th out of 79 years. Much above normal streamflow occurred in eleven states from the West Coast to the Northeast, with new record high summer flows being reported in Arkansas and Vermont. Alaska continued to experience low streamflows, however, setting a new summer season record low.

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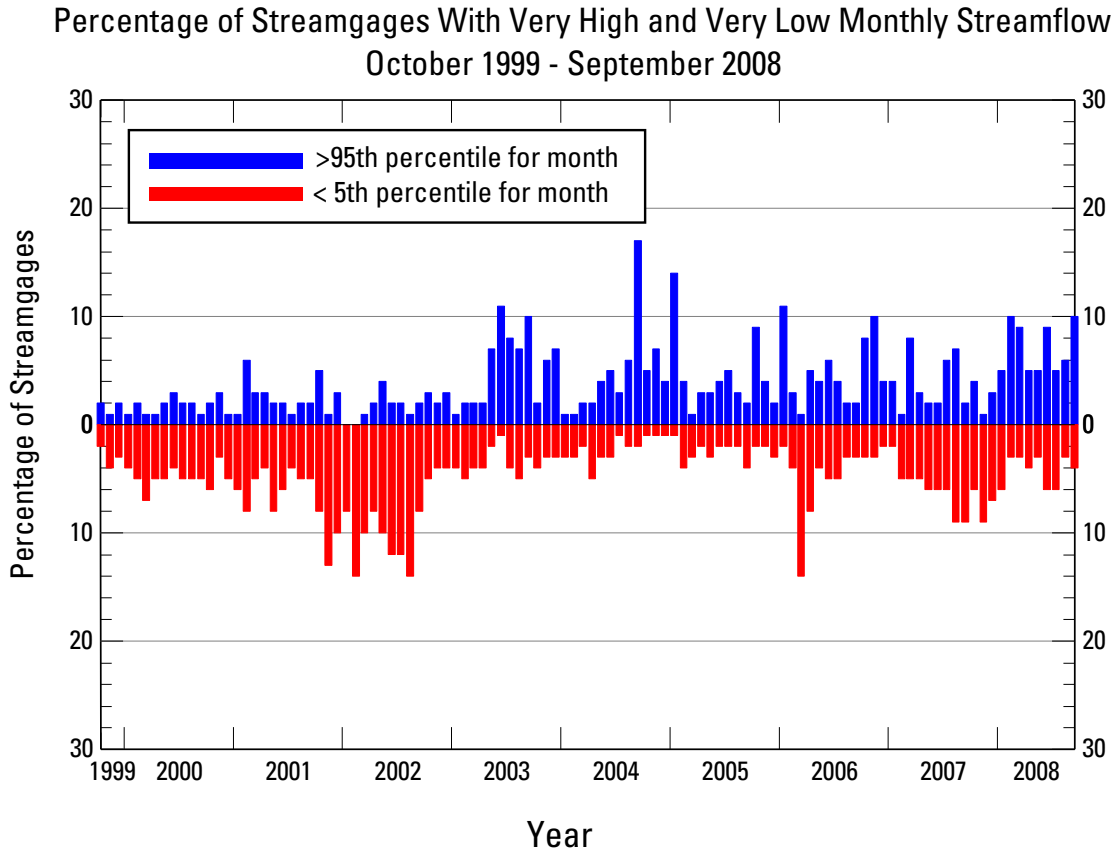
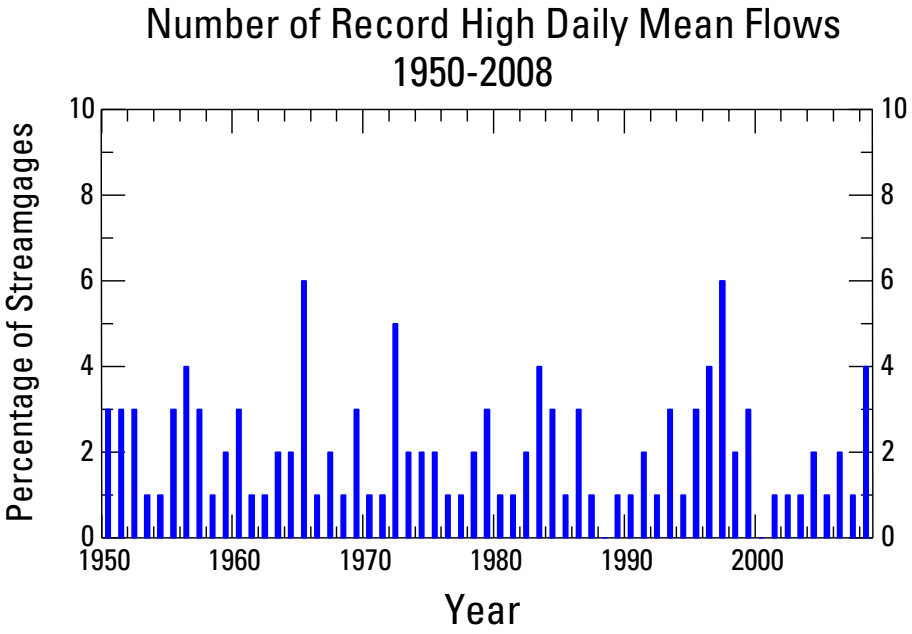
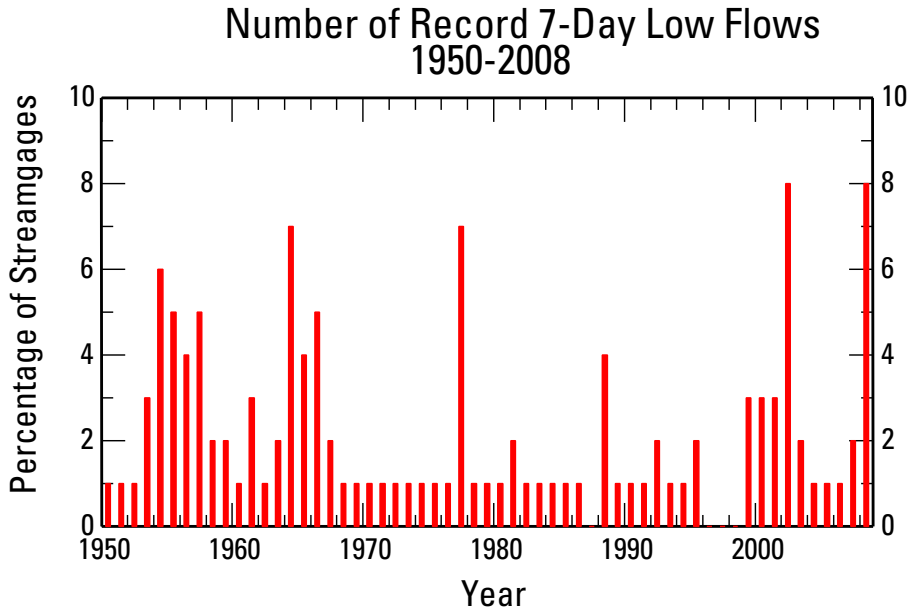
High and Low Flows



In any given month, on average, it is expected that five percent of the streamgages will experience very high (>95th percentile) and very low (<5th percentile) average streamflow. During water year 2008, five months (February, March, June, August, and September) had a greater number of streamgages than expected reporting very high streamflow (10, 9, 9, 6, and 10 percent respectively). Similarly, six months (October [2007], November [2007], December [2007], January, June, and July) had a greater number of streamgages reporting very low flows than expected.



In 2008, four percent of USGS streamgages reported new record high daily mean streamflow. Since 1950, the largest number of streamgages reporting new record highs in any one year was six percent, which occurred in both 1965 and 1997.



The 7-day low flow is defined as the lowest average streamflow to occur on seven consecutive days in a year. In water year 2008, eight percent of the streamgages reported new record 7-day low flows, tying 2002 for the most number of record lows during the 69-year period 1950-2008.

Additional Information

The USGS operates a network of nearly 7,500 streamgages nationwide, many real-time. Current information derived from these stations is available on the web at http://water.usgs.gov/waterwatch. Tables of data that summarize historical streamflow conditions by State, beginning in the year 1900, can be accessed at http://water.usgs.gov/waterwatch/?m=statesum. These tables are updated every few months to reflect the most current streamflow data.

The streamflow information used to prepare this summary is also used for water management, monitoring floods and droughts, bridge design, and for many recreational activities. To obtain real-time and archived streamflow data and information, visit http://water.usgs.gov/nwis. Although the national streamgage network is operated primarily by the USGS, it is funded by a partnership of 850 agencies at the Federal, State, Tribal, and local levels. For more information about the streamgage network, see http://water.usgs.gov/nsip/.

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