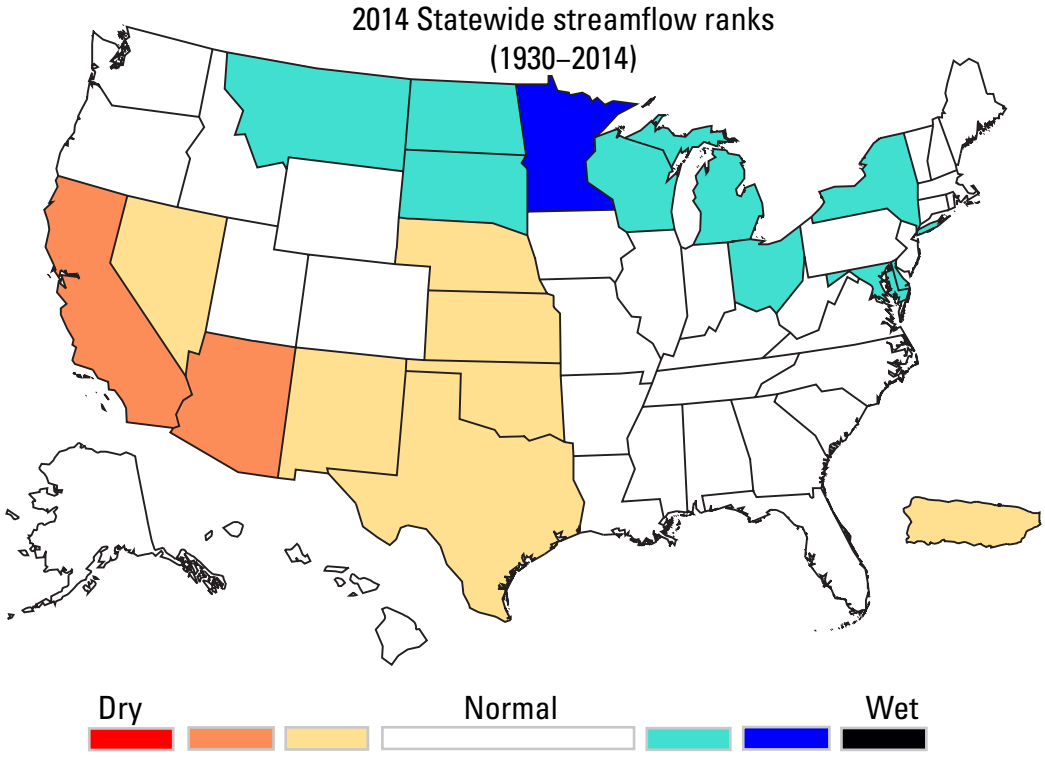
Streamflow of 2014—Water Year Summary

U.S. Geological Survey
Reston, Virginia

January 2015



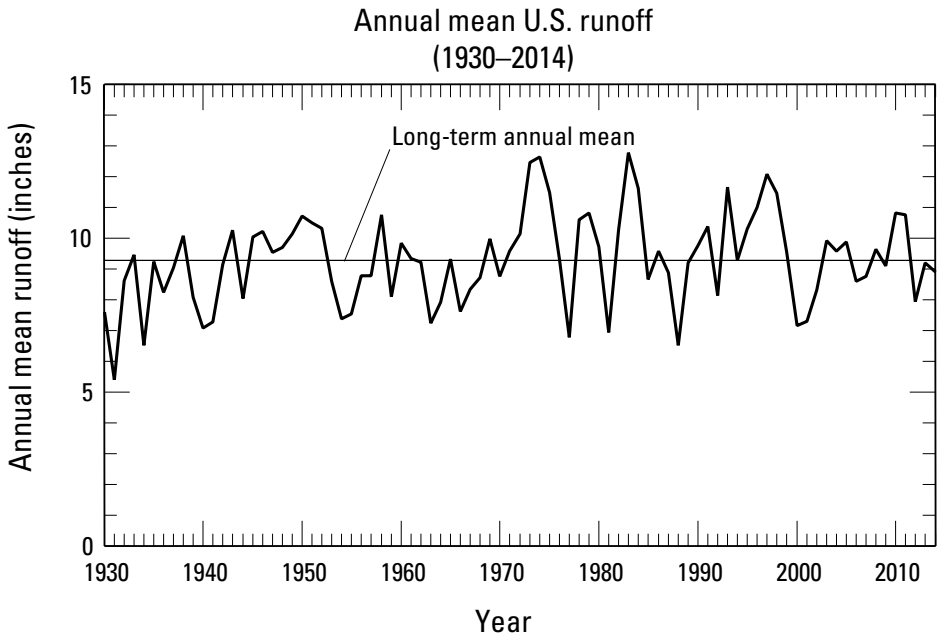
Introduction

The maps and graphs in this summary describe streamflow conditions for water year 2014 (October 1, 2013, to September 30, 2014) in the context of the 85-year period from 1930 through 2014, unless otherwise noted. The illustrations are based on observed data from the U.S. Geological Survey's (USGS) National Streamflow Information Program (NSIP) (http://water.usgs.gov/nsip/). The period 1930–2014 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.

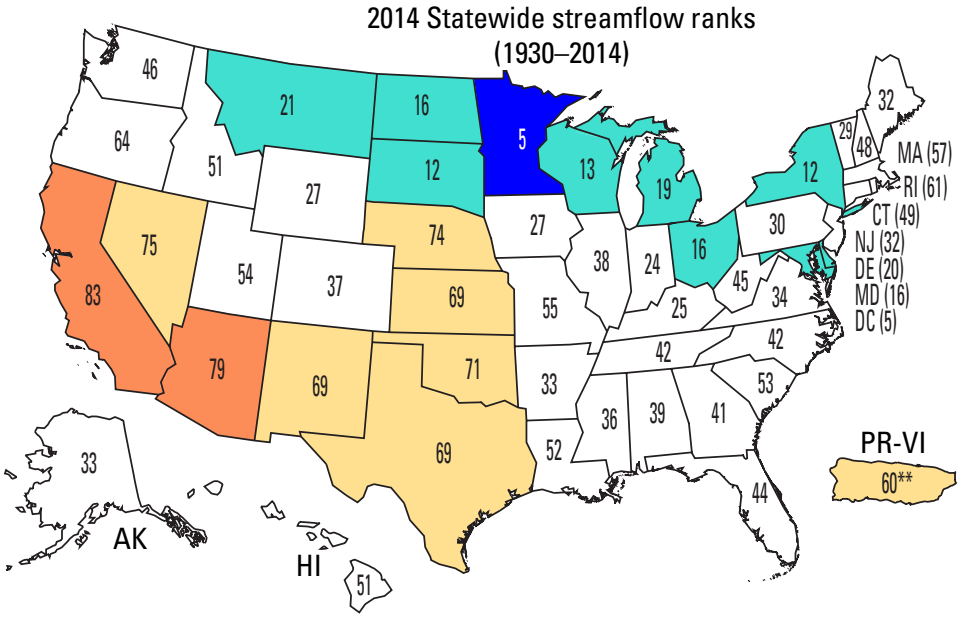
In the summary, reference is made to the term "runoff," which is the depth to which a river basin or other geographic area, such as a State, would be covered with water if all the streamflow within the area during a specified time period was uniformly distributed over the area. Runoff can also be used to quantify the magnitude of water flowing through rivers and streams in measurement units that can be compared from one area of the Nation to another.

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



Average runoff in the Nation's rivers and streams during water year 2014 (8.91 inches) was very close to the long-term annual mean for the United States (9.29 inches). Nationwide, 2014 streamflow ranked 52d out of the 85 years in the period 1930–2014. Note that in previous water-year summaries (prior to 2011) the median runoff, not the average runoff, was compared among time periods.

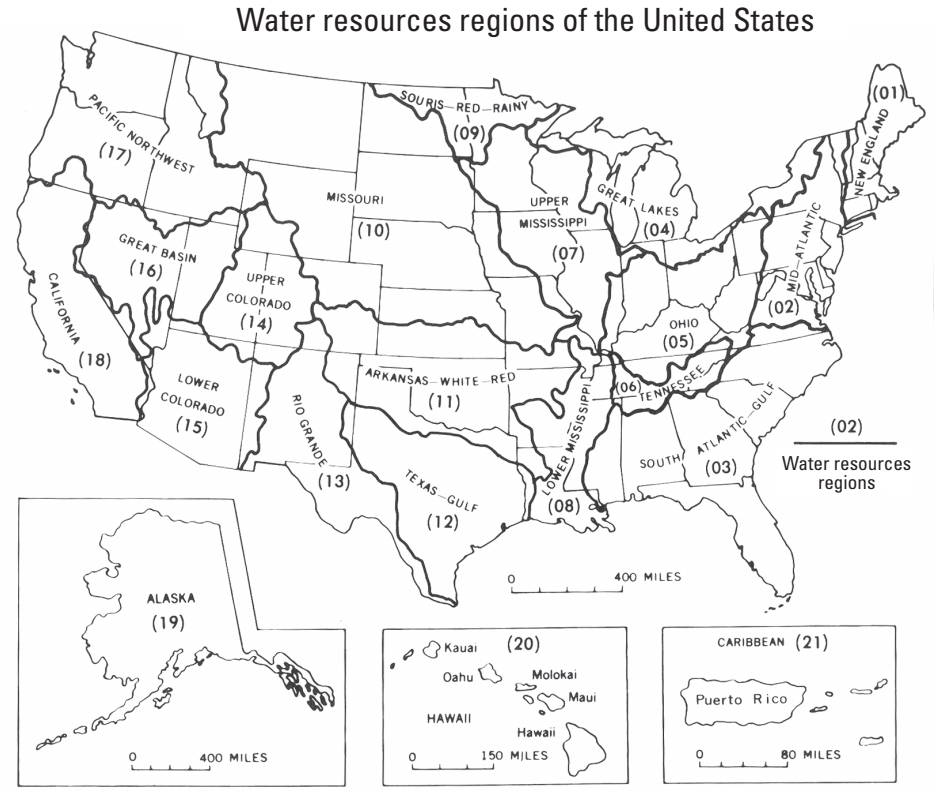


Much-below-normal streamflow was reported in California and Arizona. Below-normal streamflow occurred in Nevada, Nebraska, Kansas, Oklahoma, New Mexico, Texas, and Puerto Rico. Above-normal streamflow occurred in Montana, North Dakota, South Dakota, Wisconsin, Michigan, Ohio, New York, Maryland, and Delaware. Most States had streamflow in the normal range. Nationwide, 2014 streamflow ranked 52d out of 85 years.

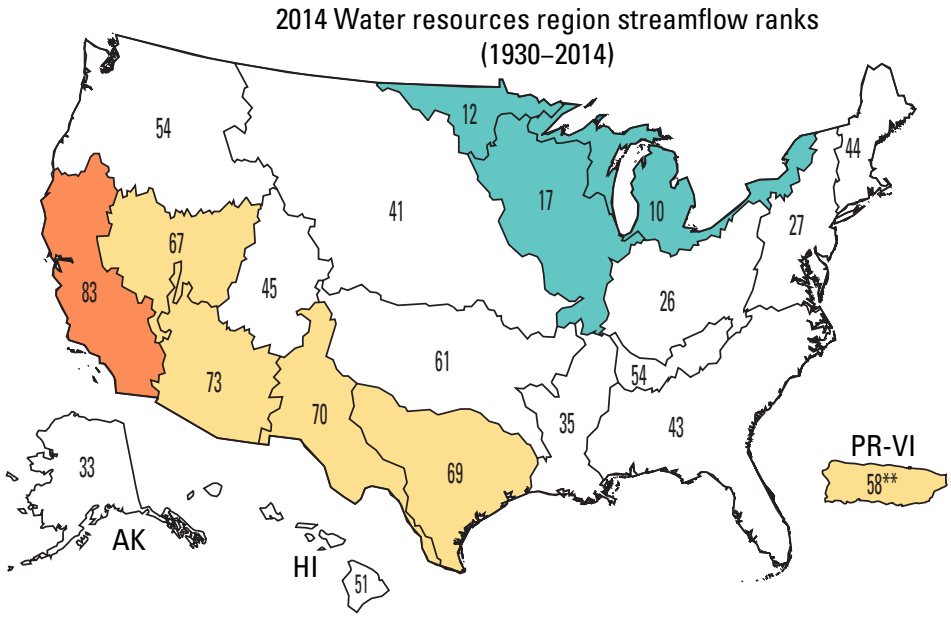
**For Puerto Rico, 71 years of available data were used.

Explanation - Rank						
85	78–84	65–77	22–64	9–21	2–8	1
Lowest	Much below normal	Below normal	Normal	Above normal	Much above normal	Highest

Regional Patterns



The United States (including Puerto Rico–Virgin Islands) 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.



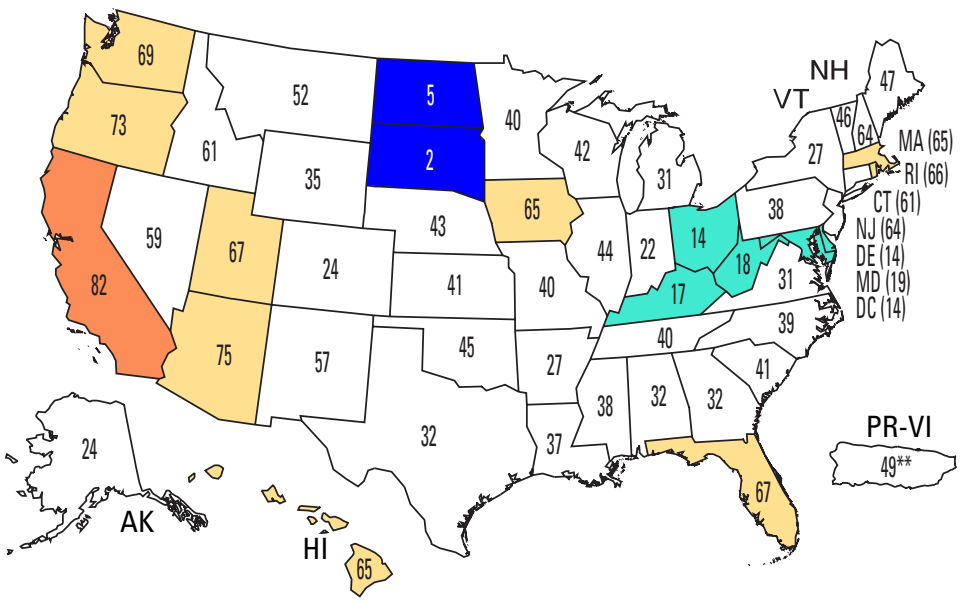
Streamflows at much-below-normal levels were reported in the California region (18). Below-normal conditions were measured in the Great Basin (16), Lower Colorado (15), Rio Grande (13), Texas Gulf (12), and Puerto Rico (21) regions. Above-normal streamflow was reported in the Souris-Red-Rainy (09), Upper Mississippi (07), and Great Lakes (04) regions.

**For Puerto Rico, 71 years of available data were used.

Explanation - Rank						
85	78–84	65–77	22–64	9–21	2–8	1
Lowest	Much below normal	Below normal	Normal	Above normal	Much above normal	Highest

Seasonal Characteristics

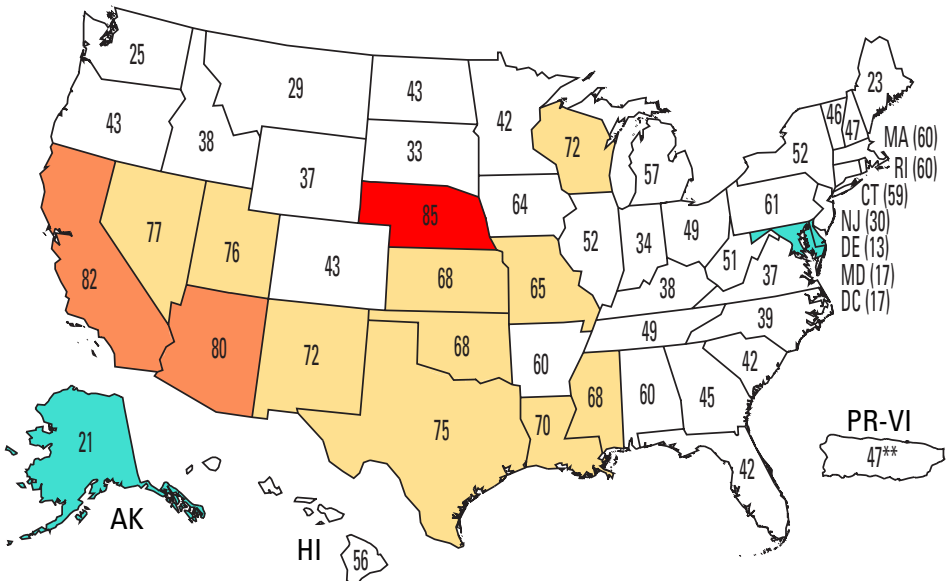
Autumn (October–December 2013) Statewide streamflow ranks



Autumn-season (October–December) streamflow was at much-below-normal level in California. Below-normal flows were reported in Washington, Oregon, Utah, Arizona, Iowa, Florida, Massachusetts, and Rhode Island. Hawaii also was at below-normal level. Much-above-normal flows were reported in North Dakota and South Dakota. Above-normal flows were reported in Kentucky, Ohio, West Virginia, Maryland, the District of Columbia, and Delaware. Nationwide, 2014 autumn-season streamflow ranked 54th out of 85 years.

**For Puerto Rico, 71 years of available data were used.

Winter (January–March 2014) Statewide streamflow ranks

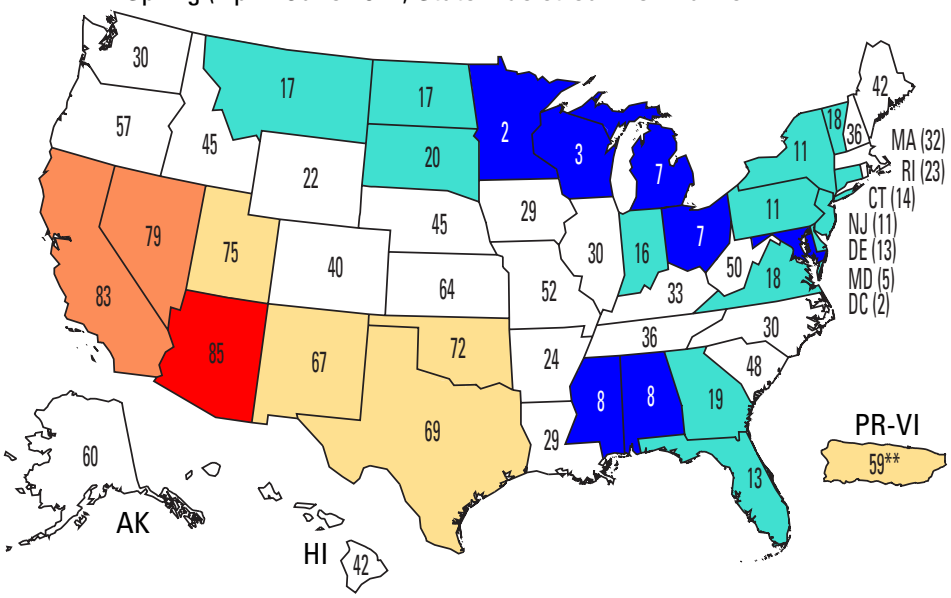


Winter-season (January–March) streamflow was at record-low levels (ranking 85th in 85 years) in Nebraska. Much-below-normal and below-normal flows were reported mostly in Southern and Southwestern States: California, Arizona, Nevada, Utah, New Mexico, Texas, Oklahoma, Kansas, Louisiana, Missouri, Mississippi, and Wisconsin. Above-normal streamflow was reported in Maryland, Alaska, the District of Columbia, and Delaware. Nationwide, 2014 winter-season streamflow ranked 68th out of 85 years.

**For Puerto Rico, 71 years of available data were used.

Explanation - Rank						
85	78–84	65–77	22–64	9–21	2–8	1
Lowest	Much below normal	Below normal	Normal	Above normal	Much above normal	Highest

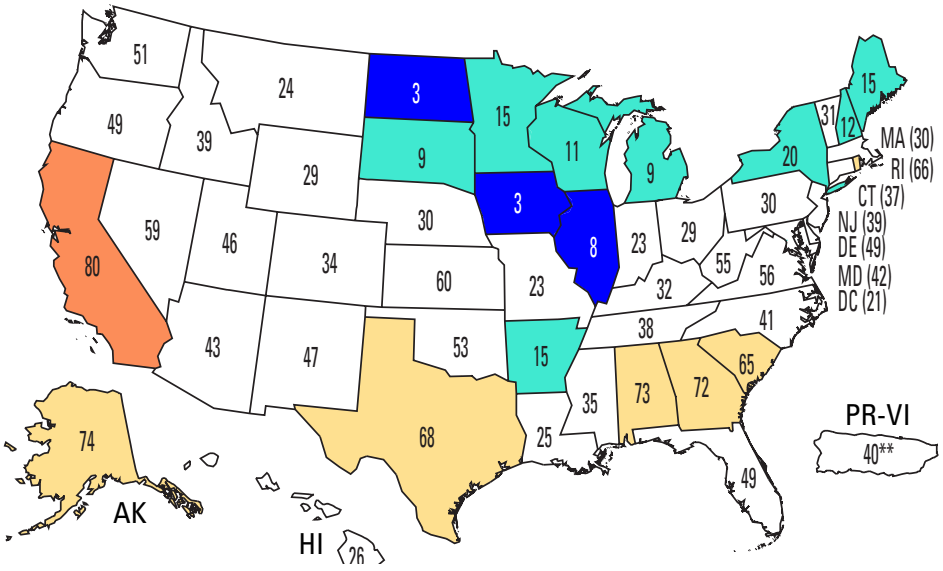
Spring (April–June 2014) Statewide streamflow ranks



Spring-season (April–June) streamflow was at record low-levels (ranking 85th in 85 years) in Arizona. Streamflow was below or much below normal in Southwestern and Southern States: California, Nevada, Utah, New Mexico, Texas, and Oklahoma. Puerto Rico also was at below-normal level. Much-above-normal streamflow was seen in North Central and Southern States: Minnesota, Wisconsin, Michigan, Ohio, Maryland, the District of Columbia, Mississippi, and Alabama. Streamflow was above normal in Montana, North Dakota, Indiana, Pennsylvania, New York, Vermont, Connecticut, New Jersey, Delaware, Virginia, Georgia, and Florida. Nationwide, 2014 spring-season streamflow ranked 23d out of 85 years.

**For Puerto Rico, 71 years of available data were used.

Summer (July–September 2014) Statewide streamflow ranks

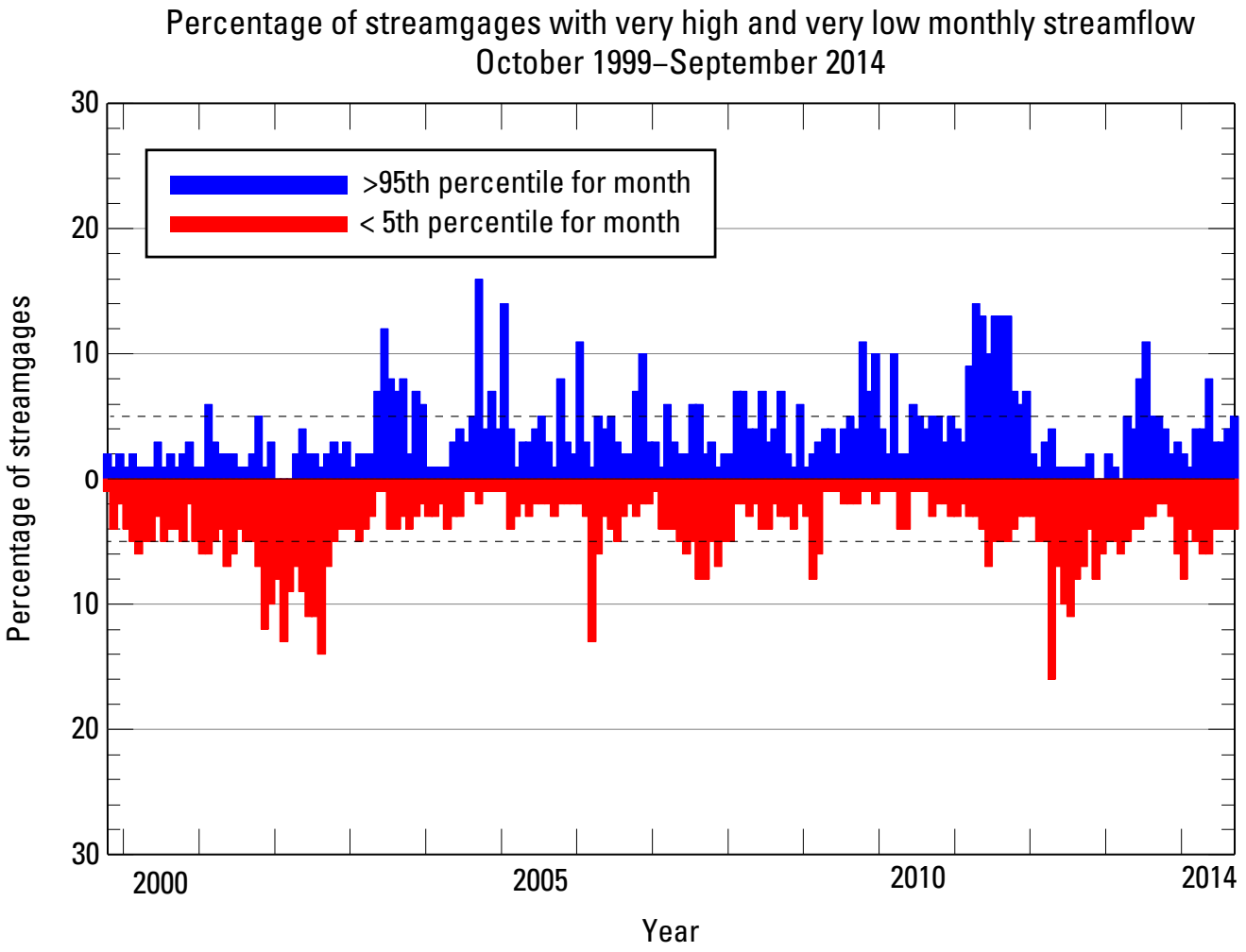


Summer-season (July–September) streamflow was higher than normal in North Central and some Northeastern States: North Dakota, South Dakota, Minnesota, Iowa, Wisconsin, Illinois, Michigan, New York, New Hampshire, and Maine; Arkansas and the District of Columbia also were at above-normal levels. Streamflow was below or much below normal in California, Texas, Alabama, Georgia, South Carolina, and Alaska. Nationwide, 2014 summer season streamflow ranked 36th out of 85 years.

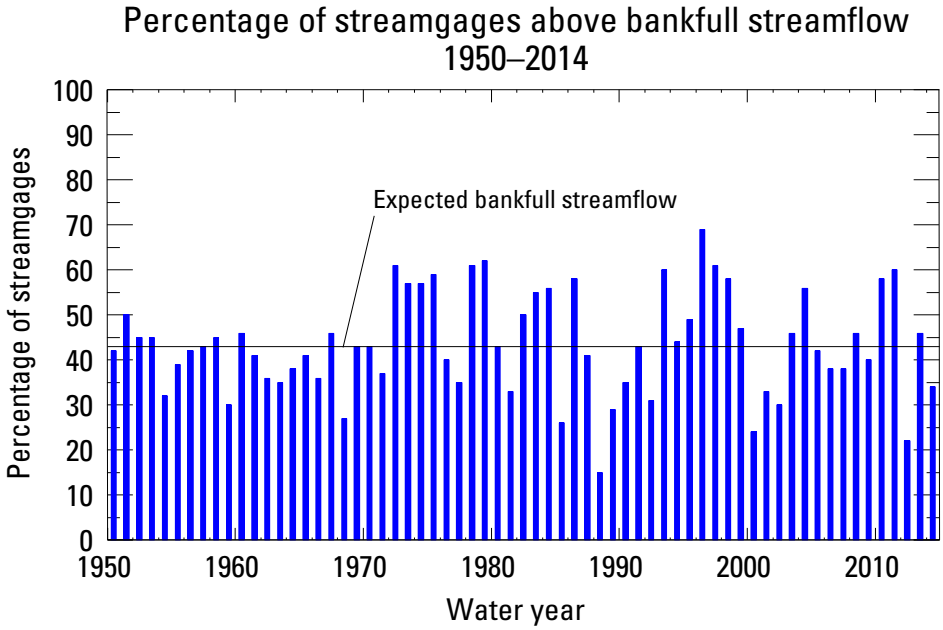
**For Puerto Rico, 71 years of available data were used.

Explanation - Rank						
85	78–84	65–77	22–64	9–21	2–8	1
Lowest	Much below normal	Below normal	Normal	Above normal	Much above normal	Highest

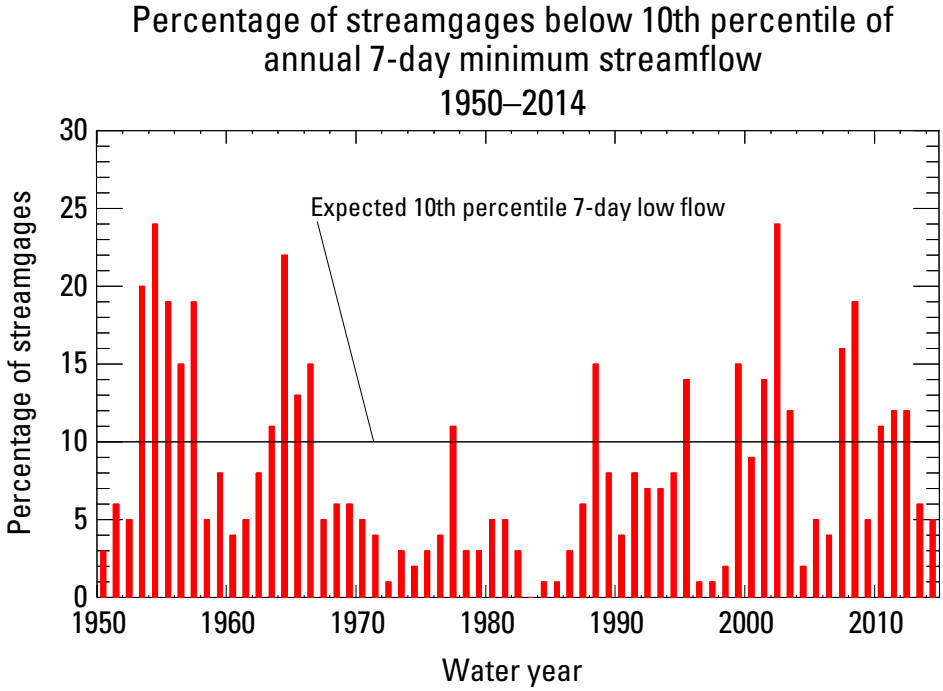
High and Low Flows



In any given month, on average, it is expected that 5 percent of the streamgages will record very high (>95th percentile) or very low (<5th percentile) average streamflow. During water year 2014, only May had a greater-than-expected percentage of streamgages reporting very high streamflow (8 percent). In contrast, there were four months (December, January, April, and May) with a greater-than-expected percentage of streamgages with very low flows (6, 8, 6, and 6 percent, respectively).



The bankfull streamflow is defined as the highest daily mean streamflow value expected to occur, on average, once in every 2.3 years. In 2014, 34 percent of streamgages had a daily mean streamflow value above the bankfull level. This value is lower than the number (43 percent) expected to occur in any given year. Since 1950, the largest number of streamgages reporting higher-than-bankfull streamflow in any single year was 69 percent, which occurred in 1996.



The 10th percentile 7-day low flow is defined as the lowest 7-day average streamflow expected to occur once every 10 years. In water year 2014, 5 percent of the streamgages reported a 7-day low-flow less than the 10th percentile 7-day low-flow value. The number expected to occur in any given year is 10 percent. Since 1950, the largest percentage of streamgages reporting a 7-day low flow less than the 10th percentile 7-day low flow was 24 percent, which occurred in 1954.

Additional Information

The USGS operates a network of nearly 8,124 streamgages nationwide, most in real time. Current information derived from these stations is available at http://waterwatch.usgs.gov/. Tables of data that summarize historical streamflow conditions by State, beginning in 1900, can be accessed at http://waterwatch.usgs.gov/?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 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, and the USGS National Streamflow Information Program (http://water.usgs.gov/nsip/) and the USGS Cooperative Water Program (https://water.usgs.gov/coop/about/monitors.html).

By Xiaodong Jian, David M. Wolock, Harry F. Lins, and Steve Brady

For additional information, contact:
Office of Surface Water
U.S. Geological Survey
415 National Center
Reston, VA 20192
http://water.usgs.gov/osw/

ISSN 2327-6932 (online)
http://dx.doi.org/10.3133/fs20153026