

## Floods and Droughts in Roanoke, Virginia



← Location of USGS  
streamgage - Roanoke  
River at Roanoke, Va.

**View of Walnut Avenue Bridge from Mill Mountain, November 4, 1985**  
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During the 20th century, floods were the number one natural disaster in the U.S. in terms of number of lives lost and property damage. Virginia experienced eight major floods, four of which affected Roanoke.

### Major floods in the Roanoke River basin

- August 19-20, 1969
- June 21-24, 1972
- November 4-5, 1985
- September 6-7, 1996

**1985 Flood** - Heavy rainfall from October 31 through November 6, 1985, caused record-breaking floods over a large region, including western and northern Virginia. Most of the rain fell on November 4 and 5 and was indirectly related to Hurricane Juan. New maximum peak discharges were recorded at 63 streamgaging stations during this flood. In the Roanoke area, 10 people died as a result of the flood, 22 in Virginia. The cost of this flood for the Roanoke-Salem area was estimated to be \$440 million.

### Major droughts in the Roanoke River basin

Five major droughts affected Virginia and the Roanoke River basin in the 20th century, during 1930-32, 1938-42, 1962-71, 1980-82, and from 1998 to the present. Most of Virginia is still experiencing residual effects of the most recent drought.

## What a USGS streamgauge can tell us

USGS streamgages not only report current streamflow conditions, they also provide long-term data to evaluate the frequency and severity of floods and droughts at local and regional scales.

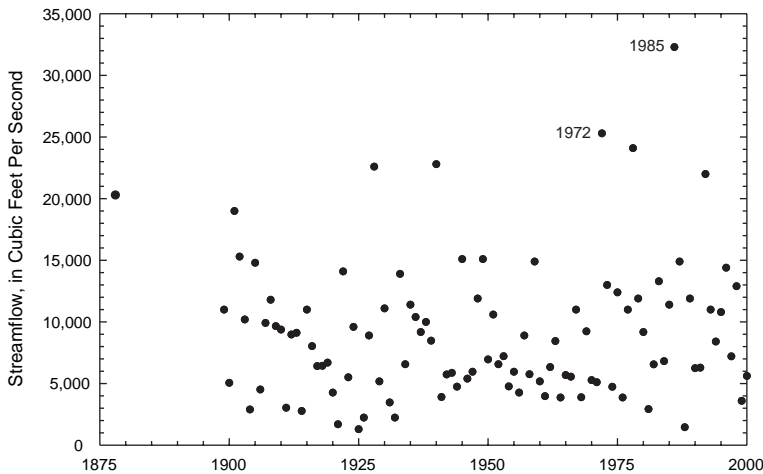
*Streamflow data collection began at Roanoke River at Roanoke, Va., in February 1899:*

- The maximum peak streamflow ever recorded at this gaging station--32,300 cubic feet per second--occurred on November 4, 1985 (see first graph below), as did the maximum stage (water-surface elevation) of 23.35 feet. Previous maximums were in 1972.
- The recurrence interval for the 1985 flood was about 175 years; that is, a flood of this magnitude has less than a 1% chance of occurring in any given year.
- The lowest daily mean streamflow value ever recorded at this gaging station--19 cubic feet per second--occurred on August 29, 1981 (see second graph).

## Graphs showing more than 100 years of streamflow data

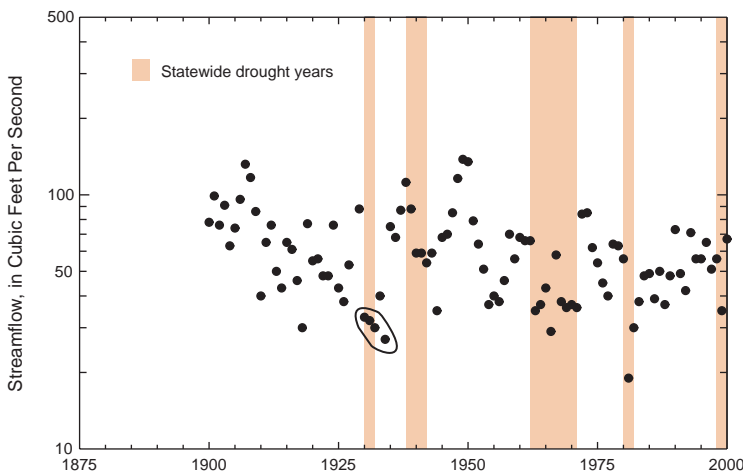
*Real-time and historical streamflow information are available on the Internet from the USGS National Water Information System (NWIS) at <http://water.usgs.gov/nwis/>*

Annual Peak Flow Values for Roanoke River at Roanoke, Va.



*Note the maximum peak streamflow value in 1985. Streamflow on November 4, 1985, was 25% greater than the previous maximum on June 21, 1972.*

Annual Minimum Daily Flow Values for Roanoke River at Roanoke, Va.



*Note that the statewide drought that ended in 1932 lasted longer in the Roanoke River basin. Also note the very low streamflow value in 1981.*