

Annual Peak-Flow Frequency Analysis

For more information on the contents of this documentation, see Kessler and others (2013).

Streamgage number and name:

05267000 Mississippi River near Royalton, Minn.

Peak-flow information:

Number of systematic peak flows in record	88
Systematic period begins	1924
Systematic period ends	2011
Length of systematic record	88
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	STATION SKEW
Low-outlier method	Bulletin 17B Grubbs-Beck test

Bulletin 17B systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
4.1725	0.2193	-0.387	

Outlier criteria and number of peak flows exceeding:

Low	3314.5	0
High	66781.3	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
4.1725	0.2193	-0.387

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	3,380	2,680	4,060
0.9900	3,990	3,230	4,720
0.9500	6,160	5,260	7,000
0.9000	7,650	6,700	8,560
0.8000	9,850	8,820	10,800
0.6667	12,300	11,200	13,500
0.5000	15,400	14,100	16,800
0.4292	16,800	15,400	18,400
0.2000	22,900	20,800	25,600
0.1000	27,700	24,900	31,600
0.0400	33,600	29,700	39,000
0.0200	37,700	33,000	44,400
0.0100	41,700	36,200	49,600
0.0050	45,500	39,200	54,700
0.0020	50,400	43,000	61,400

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1924	6,380	--	1962	25,700	--
1925	5,230	--	1963	11,300	--
1926	5,910	--	1964	14,900	--
1927	12,600	--	1965	37,700	--
1928	7,790	--	1966	25,300	--
1929	8,690	--	1967	21,700	--
1930	9,610	--	1968	16,400	--
1931	6,710	--	1969	32,400	--
1932	5,380	--	1970	18,800	--
1933	9,200	--	1971	20,500	--
1934	4,090	--	1972	30,100	--
1935	5,470	--	1973	15,500	--
1936	9,380	--	1974	22,800	--
1937	10,300	--	1975	30,700	--
1938	19,200	--	1976	14,000	--
1939	13,900	--	1977	6,140	--
1940	9,080	--	1978	18,300	--
1941	15,900	--	1979	35,100	--
1942	14,700	--	1980	14,500	--
1943	24,000	--	1981	10,400	--
1944	19,200	--	1982	33,600	--
1945	17,100	--	1983	14,000	--
1946	19,600	--	1984	17,200	--
1947	15,300	--	1985	18,400	--
1948	18,800	--	1986	23,500	--
1949	6,820	--	1987	10,800	--
1950	28,000	--	1988	9,040	--
1951	14,900	--	1989	16,100	--
1952	29,400	--	1990	11,600	--
1953	20,700	--	1991	13,800	--
1954	19,300	--	1992	12,300	--
1955	12,100	--	1993	19,000	--
1956	18,400	--	1994	18,300	--
1957	17,700	--	1995	15,800	--
1958	5,510	--	1996	22,800	--
1959	16,000	--	1997	38,200	--
1960	14,900	--	1998	14,200	--
1961	9,140	--	1999	27,000	--

Water year	Peak flow	Peak-flow code
2000	10,400	--
2001	35,500	--
2002	16,900	--
2003	14,500	--
2004	8,740	--
2005	16,500	--
2006	14,700	--
2007	12,400	--
2008	15,500	--
2009	26,200	--
2010	19,500	--
2011	17,700	--