Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:

05331000 Mississippi River at St. Paul, Minn.

Peak-flow information:

Number of systematic peak flows in record	119
Systematic period begins	1893
Systematic period ends	2011
Length of systematic record	119
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:

Mean	Standard deviation	Skewness
4.6001	0.2633	-0.345

Outlier criteria and number of peak flows exceeding:

Low	6174.0	0
High	256793.2	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
4.6001	0.2633	-0.345

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	6,870	5,450	8,320
0.9900	8,350	6,760	9,940
0.9500	13,900	11,800	15,900
0.9000	18,000	15,700	20,200
0.8000	24,200	21,600	26,800
0.6667	31,600	28,600	34,700
0.5000	41,200	37,600	45,200
0.4292	45,900	41,800	50,400
0.2000	66,800	60,400	74,900
0.1000	84,400	75,300	96,200
0.0400	107,000	93,800	124,000
0.0200	123,000	107,000	146,000
0.0100	140,000	120,000	167,000
0.0050	156,000	133,000	188,000
0.0020	177,000	150,000	217,000

Peak-flow data used in the analysis:

Explanation of symbols and codes

   ––   none

Water year	Peak flow	Peak-flow code	Water year	Peak flow	Peak-flow code
1893	58,800	––	1931	9,670	––
1894	41,200	––	1932	17,600	––
1895	9,640	––	1933	14,400	––
1896	35,300	––	1934	7,460	––
1897	86,200	––	1935	12,600	––
1898	35,800	––	1936	37,500	––
1899	36,800	––	1937	23,300	––
1900	25,800	––	1938	38,800	––
1901	19,800	––	1939	35,600	––
1902	19,800	––	1940	23,700	––
1903	43,000	––	1941	39,400	––
1904	51,800	––	1942	30,300	––
1905	59,800	––	1943	58,200	––
1906	50,600	––	1944	56,900	––
1907	50,600	––	1945	53,400	––
1908	73,000	––	1946	41,000	––
1909	48,900	––	1947	46,500	––
1910	35,800	––	1948	46,900	––
1911	8,450	––	1949	43,200	––
1912	39,000	––	1950	53,900	––
1913	15,800	––	1951	92,800	––
1914	40,500	––	1952	125,000	––
1915	31,100	––	1953	47,000	––
1916	73,500	––	1954	43,500	––
1917	68,600	––	1955	25,700	––
1918	22,500	––	1956	34,900	––
1919	54,500	––	1957	78,400	––
1920	53,100	––	1958	18,200	––
1921	19,500	––	1959	22,200	––
1922	46,000	––	1960	43,300	––
1923	13,200	––	1961	22,600	––
1924	12,900	––	1962	56,400	––
1925	16,800	––	1963	31,600	––
1926	14,500	––	1964	33,400	––
1927	35,000	––	1965	171,000	––
1928	33,000	––	1966	49,400	––
1929	45,800	––	1967	52,200	––
1930	22,000	––	1968	27,300	––

Water year	Peak flow	Peak-flow code
1969	156,000	––
1970	35,800	––
1971	49,800	––
1972	51,600	––
1973	51,800	––
1974	39,500	––
1975	78,300	––
1976	33,400	––
1977	18,800	––
1978	40,100	––
1979	75,400	––
1980	30,200	––
1981	25,900	––
1982	57,600	––
1983	64,100	––
1984	70,800	––
1985	55,600	––
1986	83,300	––
1987	30,300	––
1988	16,400	––
1989	29,200	––
1990	35,500	––
1991	52,000	––
1992	48,500	––
1993	104,000	––
1994	59,100	––
1995	53,900	––
1996	50,800	––
1997	134,000	––
1998	54,400	––
1999	62,600	––
2000	24,600	––
2001	143,000	––
2002	43,400	––
2003	38,600	––
2004	47,200	––
2005	47,400	––
2006	60,900	––

Water year	Peak flow	Peak-flow code
2007	49,000	——
2008	47,600	——
2009	62,300	——
2010	98,300	——
2011	103,000	——