

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05220500 Mississippi River below Sandy River near Libby, Minn.

Peak-flow information:

Number of systematic peak flows in record	61
Systematic period begins	1930
Systematic period ends	1990
Length of systematic record	61
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	
3.7222	0.1616	-0.174	

Outlier criteria and number of peak flows exceeding:

Low	1832.5	0
High	15184.9	1

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.7222	0.1616	-0.174

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	1,900	1,560	2,220
0.9900	2,120	1,760	2,440
0.9500	2,810	2,440	3,140
0.9000	3,250	2,890	3,590
0.8000	3,870	3,500	4,220
0.6667	4,540	4,160	4,910
0.5000	5,330	4,930	5,770
0.4292	5,700	5,270	6,180
0.2000	7,230	6,640	8,000
0.1000	8,430	7,660	9,490
0.0400	9,890	8,860	11,400
0.0200	10,900	9,690	12,800
0.0100	12,000	10,500	14,100
0.0050	12,900	11,300	15,500
0.0020	14,200	12,300	17,300

Peak-flow data used in the analysis:

Explanation of symbols and codes

K Peak affected by regulation

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1930	2,890	K	1961	4,450	K
1931	2,840	K	1962	6,220	K
1932	2,420	K	1963	4,520	K
1933	3,690	K	1964	6,200	K
1934	2,100	K	1965	7,340	K
1935	2,830	K	1966	8,380	K
1936	5,150	K	1967	5,680	K
1937	4,760	K	1968	4,590	K
1938	8,000	K	1969	9,080	K
1939	4,190	K	1970	6,140	K
1940	2,770	K	1971	8,300	K
1941	6,350	K	1972	7,010	K
1942	4,520	K	1973	4,050	K
1943	6,210	K	1974	6,860	K
1944	6,830	K	1975	8,770	K
1945	7,080	K	1976	4,740	K
1946	4,950	K	1977	3,640	K
1947	6,000	K	1978	6,040	K
1948	8,060	K	1979	8,230	K
1949	3,550	K	1980	3,520	K
1950	16,000	K	1981	4,220	K
1951	5,840	K	1982	7,190	K
1952	5,880	K	1983	4,800	K
1953	6,730	K	1984	5,390	K
1954	6,960	K	1985	6,260	K
1955	4,910	K	1986	7,170	K
1956	5,440	K	1987	4,600	K
1957	6,030	K	1988	3,890	K
1958	2,650	K	1989	6,360	K
1959	4,660	K	1990	4,540	K
1960	5,660	K			