

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05316500 Redwood River near Redwood Falls, Minn.

Peak-flow information:

Number of systematic peak flows in record	86
Systematic period begins	1910
Systematic period ends	2011
Length of systematic record	102
Years without information	16
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.172
Standard error of generalized skew	0.426
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
3.0945	0.5507	-0.491

Outlier criteria and number of peak flows exceeding:

Low	28.9	0
High	53441.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.0945	0.5507	-0.386

Annual frequency curve at selected exceedance probabilities:

[WIE, Weighted independent estimate; --, not computed]

Exceedance probability	Peak estimate	Lower-95 level	Upper 95 level	WIE estimate	Lower-95 WIE level	Upper 95 WIE level
0.9950	30.0	16.7	48	--	--	--
0.9900	45.7	26.8	70	--	--	--
0.9500	136.0	91.0	188	--	--	--
0.9000	234.0	167.0	312	--	--	--
0.8000	441.0	333.0	564	--	--	--
0.6667	772.0	606.0	969	--	--	--
0.5000	1,350.0	1,080.0	1,690	1,370	1,040	1,800
0.4292	1,680.0	1,340.0	2,130	--	--	--
0.2000	3,680.0	2,870.0	4,880	3,670	2,820	4,780
0.1000	5,940.0	4,500.0	8,240	5,880	4,410	7,840
0.0400	9,590.0	7,010.0	14,000	9,360	6,630	13,200
0.0200	12,800.0	9,160.0	19,400	12,400	8,290	18,600
0.0100	16,500.0	11,500.0	25,700	15,800	9,950	25,100
0.0050	20,600.0	14,100.0	33,000	--	--	--
0.0020	26,600.0	17,800.0	44,000	24,900	13,600	45,600

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
1910	224	--	1963	1,410	--
1911	158	--	1964	365	--
1912	186	--	1965	7,050	--
1913	150	--	1966	1,380	--
1914	402	--	1967	1,240	--
Gap in systematic record			1968	722	--
1931	39	--	1969	14,100	--
1932	387	--	1970	602	--
1933	110	--	1971	445	--
1934	30	--	1972	1,700	--
1935	66	--	1973	1,070	--
1936	387	--	1974	182	--
1937	1,400	--	1975	1,710	--
1938	1,120	--	1976	1,530	--
1939	550	--	1977	3,730	--
1940	705	--	1978	1,840	--
1941	1,120	--	1979	2,510	--
1942	383	--	1980	3,250	--
1943	1,830	--	1981	1,270	--
1944	2,800	--	1982	1,550	--
1945	828	--	1983	4,760	--
1946	845	--	1984	3,790	--
1947	2,400	--	1985	3,220	--
1948	2,740	--	1986	4,630	--
1949	1,360	--	1987	1,030	--
1950	910	--	1988	549	--
1951	4,860	--	1989	3,740	--
1952	6,790	--	1990	1,450	--
1953	1,340	--	1991	2,510	--
1954	1,470	--	1992	1,750	--
1955	329	--	1993	12,600	--
1956	485	--	1994	1,930	--
1957	19,700	--	1995	3,010	--
1958	719	--	1996	973	--
1959	302	--	1997	7,200	--
1960	7,660	--	1998	1,440	--
1961	400	--	1999	1,100	--
1962	3,980	--	2000	1,060	--

Water year	Peak flow	Peak-flow code
2001	5,830	--
2002	1,610	--
2003	1,160	--
2004	3,210	--
2005	677	--
2006	1,690	--
2007	4,500	--
2008	1,230	--
2009	974	--
2010	8,000	--
2011	7,370	--