

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05279000 South Fork Crow River near Mayer, Minn.

Peak-flow information:

Number of systematic peak flows in record	57
Systematic period begins	1934
Systematic period ends	1991
Length of systematic record	58
Years without information	1
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.16
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.3221	0.4157	-0.329

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	344

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.3223	0.4152	-0.260

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	142	36.0	258	--	--	--
0.9900	190	60.2	321	--	--	--
0.9500	407	209.0	595	--	--	--
0.9000	602	368.0	836	--	--	--
0.8000	953	663.0	1,270	--	--	--
0.6667	1,440	1,070.0	1,880	--	--	--
0.5000	2,190	1,670.0	2,850	2,130	1,660	2,740
0.4292	2,590	1,990.0	3,370	--	--	--
0.2000	4,740	3,650.0	6,360	4,540	3,520	5,860
0.1000	6,940	5,260.0	9,960	6,570	4,950	8,710
0.0400	10,200	7,470.0	16,700	9,500	6,770	13,300
0.0200	13,100	9,120.0	23,700	12,000	8,080	17,700
0.0100	16,100	10,700.0	32,800	14,600	9,330	22,700
0.0050	19,500	12,200.0	44,500	--	--	--
0.0020	24,400	14,000.0	64,800	21,500	12,000	38,300

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1934	28	*	1963	3,750	--
1935	770	--	1964	506	--
1936	2,470	--	1965	16,100	--
1937	860	--	1966	2,520	--
1938	1,360	--	1967	3,180	--
1939	1,960	--	1968	1,460	--
1940	461	--	1969	9,770	--
1941	2,400	--	1970	1,400	--
1942	920	--	1971	2,500	--
1943	3,490	--	1972	5,360	--
1944	4,120	--	1973	2,280	--
1945	3,300	--	1974	1,330	--
1946	2,050	--	1975	5,900	--
1947	1,400	--	1976	1,490	--
1948	4,620	--	1977	381	--
1949	2,070	--	1978	2,290	--
1950	2,200	--	1979	5,530	--
1951	5,070	--	1980	1,220	--
1952	11,000	--	1981	1,050	--
1953	3,900	--	1982	4,970	--
1954	1,440	--	1983	3,800	--
1955	1,500	--	1984	4,200	--
1956	2,850	--	Gap in systematic record		
1957	9,660	--	1986	5,980	--
1958	1,490	--	1987	456	--
1959	344	--	1988	400	--
1960	3,550	--	1989	960	--
1961	457	--	1990	4,300	--
1962	3,000	--	1991	6,760	--