

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05372990 Cascade Creek at Rochester, Minn.

Peak-flow information:

Number of systematic peak flows in record	14
Systematic period begins	1969
Systematic period ends	1983
Length of systematic record	15
Years without information	1
Peak flows not used in analysis	1
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.243
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
	2.7557	0.3154	0.158

Outlier criteria and number of peak flows exceeding:

Low	114.2	0
High	2842.1	1

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.7557	0.3154	-0.108	

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	81.6	29.9	142	--	--	--
0.9900	99.4	39.7	166	--	--	--
0.9500	169.0	84.3	255	--	--	--
0.9000	223.0	124.0	322	--	--	--
0.8000	310.0	194.0	432	--	--	--
0.6667	421.0	285.0	580	--	--	--
0.5000	577.0	413.0	810	661	469	933
0.4292	657.0	475.0	939	--	--	--
0.2000	1,050.0	756.0	1,690	1,380	985	1,930
0.1000	1,430.0	993.0	2,560	2,070	1,470	2,920
0.0400	1,980.0	1,300.0	4,000	3,160	2,190	4,550
0.0200	2,430.0	1,540.0	5,350	4,040	2,720	5,980
0.0100	2,910.0	1,790.0	6,930	4,910	3,160	7,640
0.0050	3,440.0	2,040.0	8,790	--	--	--
0.0020	4,190.0	2,390.0	11,700	7,270	4,180	12,600

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

NA Missing peak value

Water	Peak	Peak-flow
year	flow	code
1969	450	--
1970	401	--
1971	880	--
1972	170	--
1973	1,430	--
1974	2,050	--
1975	240	--
1976	1,000	--
1977	302	--
1978	986	--
1979	402	--
1980	NA	--
1981	1,060	--
1982	381	--
1983	414	--