

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05124500 Isabella River near Isabella, Minn.

Peak-flow information:

Number of systematic peak flows in record	11
Systematic period begins	1953
Systematic period ends	1977
Length of systematic record	25
Years without information	14
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	0.186
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
3.2408	0.2636	-0.048

Outlier criteria and number of peak flows exceeding:

Low	490.2	0
High	6182.6	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
3.2408	0.2636	0.117	

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	390	151	630	--	--	--
0.9900	447	186	701	--	--	--
0.9500	655	332	952	--	--	--
0.9000	806	451	1,130	--	--	--
0.8000	1,040	650	1,420	--	--	--
0.6667	1,330	902	1,800	--	--	--
0.5000	1,720	1,240	2,370	1,900	1,360	2,650
0.4292	1,920	1,400	2,700	--	--	--
0.2000	2,890	2,120	4,620	3,150	2,150	4,630
0.1000	3,820	2,710	6,870	4,170	2,680	6,470
0.0400	5,160	3,480	10,800	5,620	3,360	9,420
0.0200	6,290	4,070	14,500	6,840	3,860	12,100
0.0100	7,530	4,690	19,100	8,140	4,350	15,200
0.0050	8,880	5,330	24,600	--	--	--
0.0020	10,900	6,230	33,800	11,500	5,430	24,400

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1953	1,580	--
1954	3,550	--
1955	1,020	--
1956	2,720	--
1957	3,360	--
1958	731	--
1959	1,270	--
1960	2,190	--
1961	1,370	--
Gap in systematic record		
1976	3,900	--
1977	784	--