

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05206500 Leech Lake River at Federal Dam, Minn.

Peak-flow information:

Number of systematic peak flows in record	13
Systematic period begins	1982
Systematic period ends	1994
Length of systematic record	13
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	
2.9630	0.0872	-0.102	

Outlier criteria and number of peak flows exceeding:

Low	593.2	0
High	1421.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.9630	0.0872	-0.102

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	537	400	628
0.9900	567	434	656
0.9500	656	536	738
0.9000	708	597	787
0.8000	776	676	854
0.6667	844	754	926
0.5000	921	836	1,020
0.4292	955	870	1,060
0.2000	1,090	990	1,250
0.1000	1,180	1,070	1,400
0.0400	1,300	1,150	1,590
0.0200	1,370	1,200	1,730
0.0100	1,440	1,260	1,860
0.0050	1,510	1,300	1,990
0.0020	1,600	1,360	2,160

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

K Peak affected by regulation

Water	Peak	Peak-flow
year	flow	code
1982	1,300	--
1983	1,180	K
1984	855	K
1985	1,060	K
1986	962	K
1987	1,130	K
1988	926	K
1989	800	K
1990	840	K
1991	607	K
1992	800	K
1993	840	K
1994	860	K