

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05231000 Pine River at Cross Lake Dam, at Cross Lake, 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	
2.9796	0.1868	0.336	

Outlier criteria and number of peak flows exceeding:

Low	374.4	0
High	2432.0	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.9796	0.1868	0.336

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	361	209	487
0.9900	390	234	519
0.9500	491	326	626
0.9000	560	391	699
0.8000	661	491	810
0.6667	778	607	947
0.5000	932	754	1,140
0.4292	1,010	822	1,250
0.2000	1,360	1,110	1,820
0.1000	1,680	1,340	2,430
0.0400	2,120	1,630	3,400
0.0200	2,490	1,850	4,270
0.0100	2,880	2,080	5,290
0.0050	3,310	2,320	6,480
0.0020	3,920	2,640	8,340

Peak-flow data used in the analysis:

Explanation of symbols and codes

K Peak affected by regulation

Water year	Peak flow	Peak-flow code
1982	1,600	K
1983	1,000	K
1984	780	K
1985	2,150	K
1986	1,550	K
1987	1,000	K
1988	500	K
1989	745	K
1990	800	K
1991	900	K
1992	520	K
1993	1,250	K
1994	750	K