

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

04013100 Lake Superior tributary near Taconite Harbor, Minn.

Peak-flow information:

Number of systematic peak flows in record	18
Systematic period begins	1964
Systematic period ends	1981
Length of systematic record	18
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	0.5
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
1.9137	0.3862	0.843

Outlier criteria and number of peak flows exceeding:

Low	10.3	0
High	653.7	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
1.9137	0.3862	0.615	

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	13.8	6.2	22.8	--	--	--
0.9900	15.6	7.2	25.1	--	--	--
0.9500	22.5	11.8	34.4	--	--	--
0.9000	28.3	15.9	41.9	--	--	--
0.8000	38.3	23.3	55.0	--	--	--
0.6667	52.3	34.2	73.9	--	--	--
0.5000	74.9	51.8	106.0	74.9	51.8	108
0.4292	87.7	61.6	126.0	--	--	--
0.2000	167.0	116.0	270.0	160.0	100.0	255
0.1000	267.0	178.0	493.0	244.0	140.0	423
0.0400	461.0	282.0	1,020.0	383.0	199.0	736
0.0200	672.0	385.0	1,690.0	517.0	251.0	1,060
0.0100	959.0	514.0	2,730.0	677.0	310.0	1,480
0.0050	1,340.0	676.0	4,340.0	--	--	--
0.0020	2,060.0	952.0	7,810.0	1,190.0	477.0	2,980

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1964	167	--
1965	59	--
1966	33	--
1967	125	--
1968	33	--
1969	102	--
1970	48	--
1971	188	--
1972	600	--
1973	32	--
1974	129	--
1975	54	--
1976	42	--
1977	416	--
1978	41	--
1979	74	--
1980	110	--
1981	29	--