

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05384150 Root River tributary near Whalan, Minn.

Peak-flow information:

Number of systematic peak flows in record	23
Systematic period begins	1959
Systematic period ends	1981
Length of systematic record	23
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.237
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
1.4337	0.4674	0.102

Outlier criteria and number of peak flows exceeding:

Low	1.9	0
High	378.5	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.4337	0.4674	-0.085

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	1.6	0.6	3.0
0.9900	2.1	0.8	3.8
0.9500	4.5	2.2	7.4
0.9000	6.8	3.6	10.5
0.8000	11.0	6.6	16.3
0.6667	17.3	11.3	25.0
0.5000	27.6	18.8	40.4
0.4292	33.4	23.0	49.7
0.2000	67.4	45.6	112.0
0.1000	107.0	69.0	198.0
0.0400	173.0	105.0	364.0
0.0200	236.0	137.0	540.0
0.0100	310.0	172.0	770.0
0.0050	399.0	212.0	1,060.0
0.0020	538.0	272.0	1,570.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1959	27.0	--
1960	42.0	--
1961	11.0	--
1962	6.1	--
1963	15.0	--
1964	4.2	--
1965	22.0	--
1966	27.0	--
1967	169.0	--
1968	24.0	--
1969	4.8	--
1970	26.0	--
1971	19.0	--
1972	35.0	--
1973	20.0	--
1974	136.0	--
1975	26.0	--
1976	6.7	--
1977	25.0	--
1978	100.0	--
1979	48.0	--
1980	172.0	--
1981	101.0	--