

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05355150 Pine Creek near Cannon Falls, Minn.

Peak-flow information:

Number of systematic peak flows in record	21
Systematic period begins	1960
Systematic period ends	1980
Length of systematic record	21
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.2
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.1398	0.4869	-0.747

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	21

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.1427	0.4787	-0.380

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	5.49	0.22	15.0	--	--	--
0.9900	7.89	0.46	19.4	--	--	--
0.9500	20.30	3.15	40.0	--	--	--
0.9000	32.60	8.79	59.3	--	--	--
0.8000	56.40	23.40	95.9	--	--	--
0.6667	91.70	47.40	151.0	--	--	--
0.5000	149.00	86.20	242.0	176	115	270
0.4292	181.00	107.00	296.0	--	--	--
0.2000	356.00	220.00	641.0	421	277	641
0.1000	541.00	330.00	1,130.0	650	415	1,020
0.0400	822.00	482.00	2,200.0	1,010	610	1,680
0.0200	1,060.00	594.00	3,500.0	1,320	753	2,320
0.0100	1,320.00	699.00	5,390.0	1,690	912	3,120
0.0050	1,600.00	795.00	8,110.0	--	--	--
0.0020	2,010.00	907.00	13,600.0	2,650	1,250	5,620

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1960	40.0	--
1961	36.0	--
1962	133.0	--
1963	21.0	--
1964	6.3	*
1965	844.0	--
1966	519.0	--
1967	428.0	--
1968	412.0	--
1969	187.0	--
1970	81.0	--
1971	232.0	--
1972	228.0	--
1973	216.0	--
1974	96.0	--
1975	300.0	--
1976	211.0	--
1977	46.0	--
1978	110.0	--
1979	186.0	--
1980	275.0	--