

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05128500 Pike River near Embarrass, Minn.

Peak-flow information:

Number of systematic peak flows in record	14
Systematic period begins	1950
Systematic period ends	1979
Length of systematic record	30
Years without information	16
Number of historical peak flows in record	1 1950

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	0.09
Standard error of generalized skew	0.4266
Low-outlier method	Multiple Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.8690	0.2334	0.310

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	Not determined

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.8712	0.2366	0.142

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	196	51.8	305	--	--	--
0.9900	222	68.6	332	--	--	--
0.9500	310	151.0	434	--	--	--
0.9000	373	215.0	511	--	--	--
0.8000	468	309.0	630	--	--	--
0.6667	582	412.0	776	--	--	--
0.5000	734	538.0	976	735	568	951
0.4292	809	597.0	1,080	--	--	--
0.2000	1,170	857.0	1,600	1,160	862	1,580
0.1000	1,510	1,070.0	2,150	1,500	1,060	2,130
0.0400	1,980	1,360.0	3,150	1,950	1,280	2,970
0.0200	2,370	1,580.0	4,200	2,300	1,440	3,680
0.0100	2,790	1,800.0	5,630	2,680	1,590	4,530
0.0050	3,250	2,020.0	7,550	--	--	--
0.0020	3,920	2,320.0	11,100	3,610	1,900	6,860

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

H Historic, outside of systematic record

Water	Peak	Peak-flow
year	flow	code
1950	2,400	H

Gap in systematic record

1954	1,750	--
1955	687	--
1956	890	--
1957	1,250	--
1958	337	--
1959	491	--
1960	574	--
1961	1,130	--
1962	590	--
1963	381	--
1964	716	--

Gap in systematic record

1977	453	--
1978	500	--
1979	1,690	--