

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05278500 South Fork Crow River at Cosmos, Minn.

Peak-flow information:

Number of systematic peak flows in record	20
Systematic period begins	1945
Systematic period ends	1964
Length of systematic record	20
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	-0.14
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
2.5193	0.3770	0.142

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	86

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.5180	0.3798	-0.046

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	33.4	4.16	66.3	--	--	--
0.9900	41.9	6.69	77.9	--	--	--
0.9500	77.4	26.10	127.0	--	--	--
0.9000	107.0	47.60	168.0	--	--	--
0.8000	158.0	87.60	240.0	--	--	--
0.6667	227.0	141.00	341.0	--	--	--
0.5000	332.0	217.00	504.0	340	236	489
0.4292	388.0	257.00	598.0	--	--	--
0.2000	689.0	456.00	1,200.0	708	481	1,040
0.1000	1,010.0	648.00	2,100.0	1,040	675	1,590
0.0400	1,500.0	915.00	4,220.0	1,550	945	2,540
0.0200	1,940.0	1,130.00	7,080.0	2,000	1,150	3,480
0.0100	2,450.0	1,340.00	11,600.0	2,520	1,370	4,620
0.0050	3,020.0	1,560.00	18,900.0	--	--	--
0.0020	3,890.0	1,840.00	34,900.0	3,940	1,870	8,290

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
1945	123	--
1946	256	--
1947	277	--
1948	400	--
1949	230	--
1950	268	--
1951	590	--
1952	958	--
1953	461	--
1954	140	--
1955	240	--
1956	259	--
1957	1,890	--
1958	356	--
1959	27	*
1960	760	--
1961	86	--
1962	507	--
1963	1,360	--
1964	267	--