

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05062700 Wild Rice River tributary near Twin Valley, Minn.

Peak-flow information:

Number of systematic peak flows in record	25
Systematic period begins	1961
Systematic period ends	1985
Length of systematic record	25
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	-0.39
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
1.8999	0.4213	-1.103

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	12

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.9027	0.4121	-0.629

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	3.99	0.19	10.0	--	--	--
0.9900	5.74	0.40	13.0	--	--	--
0.9500	14.40	2.43	26.0	--	--	--
0.9000	22.60	6.59	37.5	--	--	--
0.8000	37.50	17.30	57.8	--	--	--
0.6667	58.00	33.50	85.7	--	--	--
0.5000	88.20	56.90	128.0	81.2	59	112
0.4292	104.00	68.80	151.0	--	--	--
0.2000	180.00	125.00	272.0	176.0	129	239
0.1000	249.00	173.00	408.0	250.0	179	348
0.0400	337.00	230.00	646.0	353.0	240	519
0.0200	403.00	265.00	874.0	437.0	283	674
0.0100	466.00	294.00	1,150.0	528.0	325	858
0.0050	528.00	316.00	1,490.0	--	--	--
0.0020	607.00	338.00	2,050.0	764.0	416	1,400

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
1961	6.4	*
1962	107.0	--
1963	12.0	--
1964	23.0	--
1965	135.0	--
1966	91.0	--
1967	79.0	--
1968	61.0	--
1969	236.0	--
1970	324.0	--
1971	102.0	--
1972	154.0	--
1973	117.0	--
1974	94.0	--
1975	90.0	--
1976	61.0	--
1977	20.0	--
1978	270.0	--
1979	290.0	--
1980	75.0	--
1981	74.0	--
1982	76.0	--
1983	38.0	--
1984	120.0	--
1985	140.0	--