

## Annual Peak-Flow Frequency Analysis

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

### Streamgauge number and name:

05376800 Whitewater River near Beaver, Minn.

### Peak-flow information:

Number of systematic peak flows in record	37
Systematic period begins	1938
Systematic period ends	1999
Length of systematic record	62
Years without information	25
Number of historical peak flows in record	1 1938

### Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.22
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
3.4934	0.3934	-0.197

#### 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
3.4935	0.3934	-0.206

**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	254	51.3	480	--	--	--
0.9900	330	86.3	583	--	--	--
0.9500	667	303.0	1,020	--	--	--
0.9000	958	530.0	1,390	--	--	--
0.8000	1,470	949.0	2,040	--	--	--
0.6667	2,160	1,510.0	2,940	--	--	--
0.5000	3,210	2,330.0	4,350	3,270	2,480	4,320
0.4292	3,770	2,760.0	5,120	--	--	--
0.2000	6,730	4,950.0	9,590	6,820	5,190	8,960
0.1000	9,730	7,050.0	15,200	9,780	7,330	13,000
0.0400	14,200	9,900.0	26,200	14,100	10,200	19,400
0.0200	18,100	12,100.0	38,100	17,600	12,400	25,000
0.0100	22,300	14,100.0	54,200	21,500	14,400	32,000
0.0050	27,000	16,100.0	75,500	--	--	--
0.0020	33,700	18,500.0	114,000	31,600	18,900	52,700

**Peak-flow data used in the analysis:**

Explanation of symbols and codes

-- none

H Historic, outside of systematic record

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1938	7,500	H	1975	9,860	--
Gap in systematic record			1976	7,180	--
1940	4,760	--	1977	4,700	--
1941	1,690	--	1978	15,400	--
1942	3,330	--	1979	1,260	--
1943	2,640	--	1980	4,920	--
1944	1,730	--	1981	1,170	--
1945	4,140	--	1982	768	--
1946	4,140	--	1983	1,490	--
1947	5,350	--	1984	483	--
1948	3,380	--	1985	3,000	--
1949	4,330	--	Gap in systematic record		
1950	10,500	--	1991	2,040	--
1951	10,200	--	1992	605	--
1952	6,580	--	Gap in systematic record		
1953	6,680	--	1994	535	--
1954	2,210	--	1995	2,240	--
1955	2,350	--	1996	6,370	--
1956	4,720	--	1997	1,420	--
Gap in systematic record			1998	2,230	--
1974	19,200	--	1999	1,460	--