

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05376000 North Fork Whitewater River near Elba, Minn.

Peak-flow information:

Number of systematic peak flows in record	29
Systematic period begins	1940
Systematic period ends	1993
Length of systematic record	54
Years without information	25
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.224
Standard error of generalized skew	0.426
Low-outlier method	Bulletin 17B Grubbs-Beck test

Bulletin 17B systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
3.2121	0.5101	0.036	

Outlier criteria and number of peak flows exceeding:

Low	81.6	0
High	32536.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.2121	0.5101	-0.092

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	71.5	27.1	137	--	--	--
0.9900	98.0	40.3	179	--	--	--
0.9500	229.0	116.0	372	--	--	--
0.9000	358.0	199.0	550	--	--	--
0.8000	610.0	376.0	894	--	--	--
0.6667	997.0	662.0	1,430	--	--	--
0.5000	1,660.0	1,150.0	2,400	1,730	1,180	2,540
0.4292	2,040.0	1,430.0	3,000	--	--	--
0.2000	4,400.0	3,000.0	7,140	4,090	2,850	5,860
0.1000	7,250.0	4,730.0	13,000	5,970	4,140	8,600
0.0400	12,300.0	7,500.0	24,600	8,530	5,800	12,500
0.0200	17,200.0	10,000.0	37,300	10,600	7,000	16,000
0.0100	23,100.0	13,000.0	54,100	13,000	8,190	20,800
0.0050	30,300.0	16,300.0	76,000	--	--	--
0.0020	42,000.0	21,500.0	114,000	19,400	10,800	34,900

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1940	2,730	--
1941	400	--
Gap in systematic record		
1967	2,350	--
1968	880	--
1969	1,940	--
1970	502	--
1971	1,270	--
1972	1,410	--
1973	5,010	--
1974	16,100	--
1975	10,800	--
1976	2,620	--
1977	2,550	--
1978	12,800	--
1979	2,440	--
1980	2,810	--
1981	986	--
1982	448	--
1983	929	--
1984	199	--
1985	1,790	--
1986	2,720	--
1987	640	--
1988	450	--
1989	4,330	--
1990	3,420	--
1991	220	--
1992	326	--
1993	5,770	--