

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05316570 Beaver Creek near Beaver Falls, Minn.

Peak-flow information:

Number of systematic peak flows in record	40
Systematic period begins	1972
Systematic period ends	2011
Length of systematic record	40
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	-0.16
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
2.8595	0.3268	-0.980

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	186

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.8634	0.3157	-0.462

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	82.1	15.2	144	--	--	--
0.9900	106.0	26.0	174	--	--	--
0.9500	202.0	92.7	289	--	--	--
0.9000	280.0	160.0	380	--	--	--
0.8000	405.0	276.0	528	--	--	--
0.6667	560.0	417.0	714	--	--	--
0.5000	772.0	600.0	974	771	614	968
0.4292	876.0	687.0	1,100	--	--	--
0.2000	1,360.0	1,080.0	1,750	1,380	1,110	1,730
0.1000	1,770.0	1,410.0	2,410	1,840	1,450	2,340
0.0400	2,310.0	1,780.0	3,460	2,470	1,860	3,290
0.0200	2,700.0	2,030.0	4,400	2,980	2,150	4,140
0.0100	3,090.0	2,230.0	5,480	3,550	2,440	5,160
0.0050	3,470.0	2,400.0	6,730	--	--	--
0.0020	3,960.0	2,570.0	8,680	4,990	3,050	8,160

Peak-flow data used in the analysis:

Explanation of symbols and codes

< Less than

-- none

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1972	779	--	1992	890	--
1973	500	--	1993	2,750	--
1974	531	--	1994	615	--
1975	675	--	1995	550	--
1976	250	--	1996	590	--
1977	605	--	1997	3,300	--
1978	715	--	1998	900	--
1979	1,060	--	1999	667	--
1980	940	--	2000	530	--
1981	<450	--	2001	2,260	--
1982	496	--	2002	361	--
1983	940	--	2003	186	--
1984	1,050	--	2004	989	--
1985	1,070	--	2005	757	--
1986	1,060	--	2006	1,090	--
1987	<450	--	2007	934	--
1988	<100	--	2008	489	--
1989	700	--	2009	1,360	--
1990	965	--	2010	2,040	--
1991	965	--	2011	1,500	--