

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05317200 Little Cottonwood River near Courtland, Minn.

Peak-flow information:

Number of systematic peak flows in record	37
Systematic period begins	1974
Systematic period ends	2010
Length of systematic record	37
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.121
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
2.7677	0.3270	-0.010

Outlier criteria and number of peak flows exceeding:

Low	79.6	0
High	4308.5	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.7677	0.3270	-0.058

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	80.8	47.7	117	--	--	--
0.9900	98.4	60.6	139	--	--	--
0.9500	168.0	115.0	221	--	--	--
0.9000	222.0	161.0	284	--	--	--
0.8000	312.0	238.0	388	--	--	--
0.6667	426.0	339.0	523	--	--	--
0.5000	590.0	480.0	726	611	478	779
0.4292	675.0	550.0	837	--	--	--
0.2000	1,110.0	888.0	1,450	1,180	909	1,540
0.1000	1,530.0	1,200.0	2,110	1,690	1,260	2,280
0.0400	2,160.0	1,620.0	3,170	2,510	1,750	3,590
0.0200	2,690.0	1,970.0	4,130	3,230	2,140	4,880
0.0100	3,270.0	2,340.0	5,240	4,100	2,580	6,540
0.0050	3,910.0	2,730.0	6,510	--	--	--
0.0020	4,850.0	3,280.0	8,460	6,540	3,600	11,900

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1974	132	--
1975	517	--
1976	269	--
1977	231	--
1978	529	--
1979	933	--
1980	325	--
1981	452	--
1982	487	--
1983	951	--
1984	728	--
1985	1,340	--
1986	1,060	--
1987	220	--
1988	111	--
1989	275	--
1990	931	--
1991	526	--
1992	555	--
1993	3,520	--
1994	701	--
1995	396	--
1996	1,470	--
1997	892	--
1998	822	--
1999	548	--
2000	821	--
2001	2,750	--
2002	892	--
2003	203	--
2004	476	--
2005	556	--
2006	601	--
2007	1,100	--
2008	644	--
2009	260	--
2010	1,370	--