

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

06483350 Little Rock River near Rushmore, Minn.

Peak-flow information:

Number of systematic peak flows in record	21
Systematic period begins	1991
Systematic period ends	2011
Length of systematic record	21
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	-0.26
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	
2.7212	0.5925	1.400	

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
2.6652	0.4626	-0.064

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	27.9	2.51	64.7	--	--	--
0.9900	36.9	4.79	79.0	--	--	--
0.9500	78.7	23.00	143.0	--	--	--
0.9000	117.0	46.30	202.0	--	--	--
0.8000	189.0	94.70	312.0	--	--	--
0.6667	295.0	167.00	478.0	--	--	--
0.5000	468.0	282.00	768.0	374	273	513
0.4292	566.0	346.00	943.0	--	--	--
0.2000	1,140.0	697.00	2,180.0	982	700	1,380
0.1000	1,800.0	1,070.00	4,220.0	1,570	1,060	2,300
0.0400	2,920.0	1,620.00	9,690.0	2,410	1,530	3,790
0.0200	3,970.0	2,080.00	17,800.0	3,560	2,080	6,070
0.0100	5,240.0	2,570.00	31,800.0	4,520	2,450	8,360
0.0050	6,740.0	3,070.00	55,900.0	--	--	--
0.0020	9,130.0	3,750.00	115,000.0	8,520	3,890	18,700

Peak-flow data used in the analysis:

Explanation of symbols and codes

> Greater than

-- none

Water	Peak	Peak-flow
year	flow	code
1991	380	--
1992	370	--
1993	>1,500	--
1994	1,500	--
1995	210	--
1996	295	--
1997	520	--
1998	222	--
1999	100	--
2000	126	--
2001	795	--
2002	134	--
2003	108	--
2004	524	--
2005	326	--
2006	1,460	--
2007	>1,500	--
2008	436	--
2009	383	--
2010	>1,500	--
2011	380	--