

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05243725 Straight River near Park Rapids, Minn.

Peak-flow information:

Number of systematic peak flows in record	25
Systematic period begins	1987
Systematic period ends	2011
Length of systematic record	25
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.098
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
	1.9934	0.0972	0.812

Outlier criteria and number of peak flows exceeding:

Low	56.5	0
High	171.8	1

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.9934	0.0972	0.261

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	58.5	48.7	66.0	--	--	--
0.9900	61.1	51.5	68.5	--	--	--
0.9500	69.4	60.5	76.3	--	--	--
0.9000	74.5	66.0	81.2	--	--	--
0.8000	81.4	73.6	88.0	--	--	--
0.6667	88.8	81.4	95.6	--	--	--
0.5000	97.5	90.4	105.0	98.5	90.1	108
0.4292	102.0	94.3	110.0	--	--	--
0.2000	118.0	110.0	131.0	121.0	108.0	135
0.1000	132.0	121.0	149.0	136.0	119.0	155
0.0400	149.0	134.0	173.0	156.0	132.0	184
0.0200	161.0	143.0	191.0	172.0	142.0	209
0.0100	173.0	152.0	210.0	189.0	151.0	236
0.0050	185.0	161.0	229.0	--	--	--
0.0020	201.0	173.0	256.0	231.0	172.0	311

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1987	87	--
1988	71	--
1989	89	--
1990	75	--
1991	84	--
1992	67	--
1993	93	--
1994	88	--
1995	106	--
1996	104	--
1997	149	--
1998	101	--
1999	113	--
2000	85	--
2001	116	--
2002	108	--
2003	84	--
2004	87	--
2005	85	--
2006	106	--
2007	98	--
2008	101	--
2009	182	--
2010	125	--
2011	122	--