

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05050700 Rabbit River near Nashua, Minn.

Peak-flow information:

Number of systematic peak flows in record	28
Systematic period begins	1979
Systematic period ends	2006
Length of systematic record	28
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	-0.22
Standard error of generalized skew	0.4266
Low-outlier method	Fixed Threshold

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.6983	0.4066	-1.410

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	78

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.7020	0.3938	-0.660

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	28.0	1.54	66.2	--	--	--
0.9900	39.9	3.20	85.1	--	--	--
0.9500	97.6	18.20	167.0	--	--	--
0.9000	151.0	43.50	238.0	--	--	--
0.8000	245.0	117.00	362.0	--	--	--
0.6667	372.0	225.00	530.0	--	--	--
0.5000	556.0	375.00	778.0	508	368	701
0.4292	649.0	449.00	908.0	--	--	--
0.2000	1,100.0	789.00	1,580.0	1,020	752	1,370
0.1000	1,480.0	1,070.00	2,300.0	1,390	1,010	1,900
0.0400	1,970.0	1,400.00	3,490.0	1,870	1,300	2,700
0.0200	2,320.0	1,600.00	4,600.0	2,260	1,490	3,430
0.0100	2,660.0	1,760.00	5,910.0	2,660	1,660	4,250
0.0050	2,980.0	1,880.00	7,450.0	--	--	--
0.0020	3,380.0	2,000.00	9,980.0	3,670	2,020	6,660

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1979	838	--
1980	214	--
1981	273	--
1982	325	--
1983	430	--
1984	910	--
1985	960	--
1986	1,280	--
1987	380	--
1988	120	--
1989	760	--
1990	5	*
1991	765	--
1992	79	--
1993	720	--
1994	1,020	--
1995	765	--
1996	560	--
1997	1,640	--
1998	553	--
1999	523	--
2000	95	--
2001	1,480	--
2002	680	--
2003	689	--
2004	760	--
2005	780	--
2006	1,060	--