Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:
06483210 Kanaranzi Creek tributary number 2 near Wilmont, Minn.

Peak-flow information:

Number of systematic peak flows in record	25	
Systematic period begins	1966	
Systematic period ends	1993	
Length of systematic record	28	
Years without information	3	
Number of historical peak flows in record	1	1993
Length of historical period	41	
Historical period begins	1966	
Historical period ends	2006	
Historical period based on		Correlation with streamgage 06603530

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.221
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:

Mean	Standard deviation	Skewness
1.9978	0.6180	-1.336

Outlier criteria and number of peak flows exceeding:

Low	2.9	1
High	585.0	1

Expected moments algorithm (EMA) Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
1.9791	0.5960	-0.487

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	NA	NA	NA	−−	−−	−−
0.9900	NA	NA	NA	−−	−−	−−
0.9500	8.4	1.1	19.2	−−	−−	−−
0.9000	15.5	3.7	31.6	−−	−−	−−
0.8000	31.4	11.8	57.6	−−	−−	−−
0.6667	58.1	27.6	99.6	−−	−−	−−
0.5000	106.0	57.7	175.0	105	74.9	146
0.4292	135.0	75.7	219.0	−−	−−	−−
0.2000	309.0	184.0	504.0	281	200.0	396
0.1000	507.0	305.0	894.0	460	314.0	673
0.0400	825.0	485.0	1,740.0	786	505.0	1,220
0.0200	1,100.0	620.0	2,750.0	1,030	614.0	1,740
0.0100	1,410.0	742.0	4,180.0	1,410	774.0	2,570
0.0050	1,750.0	849.0	6,170.0	−−	−−	−−
0.0020	2,230.0	964.0	9,990.0	2,270	1,050.0	4,890

Peak-flow data used in the analysis:

Explanation of symbols and codes

−−	none
H	Historic, outside of systematic record
∗	Less than low-outlier threshold

Water year	Peak flow	Peak-flow code
1966	70.0	−−
1967	112.0	−−
1968	1.4	∗
1969	1,230.0	−−
1970	135.0	−−
1971	283.0	−−
1972	133.0	−−
1973	79.0	−−
1974	20.0	−−
1975	46.0	−−
1976	104.0	−−
1977	142.0	−−
1978	145.0	−−
1979	197.0	−−
1980	430.0	−−
1981	400.0	−−
1982	110.0	−−
1983	270.0	−−
1984	240.0	−−
1985	160.0	−−
1986	268.0	−−
1987	128.0	−−
1988	6.0	−−
1989	69.0	−−
1990	15.0	−−
1993	585.0	H