

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05316800 Cottonwood River tributary near Balaton, Minn.

Peak-flow information:

Number of systematic peak flows in record	27
Systematic period begins	1959
Systematic period ends	1985
Length of systematic record	27
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.247
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
1.5318	0.6263	-0.424

Outlier criteria and number of peak flows exceeding:

Low	0.9	0
High	1286.3	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.5318	0.6263	-0.327

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	0.5	0.1	1.3	--	--	--
0.9900	0.8	0.3	1.9	--	--	--
0.9500	2.8	1.1	5.2	--	--	--
0.9000	5.1	2.4	8.9	--	--	--
0.8000	10.4	5.6	16.9	--	--	--
0.6667	19.5	11.6	30.9	--	--	--
0.5000	36.8	23.1	59.1	36.5	22.6	59
0.4292	47.4	30.0	77.7	--	--	--
0.2000	116.0	71.6	217.0	103.0	64.6	165
0.1000	204.0	119.0	425.0	167.0	101.0	275
0.0400	359.0	196.0	852.0	264.0	151.0	461
0.0200	508.0	264.0	1,310.0	349.0	188.0	649
0.0100	687.0	342.0	1,920.0	441.0	225.0	865
0.0050	897.0	430.0	2,690.0	--	--	--
0.0020	1,230.0	559.0	3,990.0	694.0	306.0	1,570

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1959	12.0	--
1960	64.0	--
1961	8.2	--
1962	31.0	--
1963	73.0	--
1964	35.0	--
1965	23.0	--
1966	12.0	--
1967	16.0	--
1968	1.3	--
1969	106.0	--
1970	23.0	--
1971	39.0	--
1972	44.0	--
1973	9.8	--
1974	25.0	--
1975	19.0	--
1976	18.0	--
1977	84.0	--
1978	30.0	--
1979	486.0	--
1980	133.0	--
1981	1.2	--
1982	130.0	--
1983	380.0	--
1984	250.0	--
1985	94.0	--