

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05373350 Zumbro River tributary near South Troy, Minn.

Peak-flow information:

Number of systematic peak flows in record	24
Systematic period begins	1962
Systematic period ends	1985
Length of systematic record	24
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.233
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
	1.4704	0.3991	-0.020

Outlier criteria and number of peak flows exceeding:

Low	3.1	0
High	285.0	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.4704	0.3991	-0.133

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	2.5	1.0	4.3	--	--	--
0.9900	3.2	1.4	5.3	--	--	--
0.9500	6.3	3.4	9.5	--	--	--
0.9000	9.0	5.4	13.0	--	--	--
0.8000	13.7	9.0	19.0	--	--	--
0.6667	20.2	14.2	27.5	--	--	--
0.5000	30.1	22.0	41.5	30.4	21.7	42.6
0.4292	35.5	26.0	49.5	--	--	--
0.2000	64.4	46.4	98.4	68.1	49.1	94.5
0.1000	94.6	65.7	158.0	105.0	75.0	147.0
0.0400	141.0	93.3	261.0	168.0	117.0	242.0
0.0200	182.0	116.0	360.0	228.0	155.0	338.0
0.0100	229.0	140.0	481.0	296.0	191.0	460.0
0.0050	281.0	167.0	626.0	--	--	--
0.0020	358.0	204.0	859.0	501.0	287.0	873.0

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow
year	flow	code
1962	16.0	--
1963	9.5	--
1964	3.6	--
1965	21.0	--
1966	12.0	--
1967	84.0	--
1968	26.0	--
1969	20.0	--
1970	65.0	--
1971	9.0	--
1972	24.0	--
1973	26.0	--
1974	122.0	--
1975	117.0	--
1976	27.0	--
1977	30.0	--
1978	138.0	--
1979	29.0	--
1980	102.0	--
1981	72.0	--
1982	20.0	--
1983	20.0	--
1984	21.0	--
1985	31.0	--