

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05073750 Spring Creek near Blackduck, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1960
Systematic period ends	1985
Length of systematic record	26
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	-0.34
Standard error of generalized skew	0.4266
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.9686	0.4684	1.338

Low-outlier information:

Number of low outliers	0
Low-outlier threshold	20

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
1.9603	0.4406	0.042

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	6.96	1.14	14.1	--	--	--
0.9900	8.89	1.91	16.8	--	--	--
0.9500	17.40	6.79	28.7	--	--	--
0.9000	25.00	12.20	39.4	--	--	--
0.8000	38.80	22.40	59.2	--	--	--
0.6667	58.60	36.90	88.6	--	--	--
0.5000	90.60	59.40	139.0	92.5	66.2	129
0.4292	109.00	71.70	169.0	--	--	--
0.2000	214.00	139.00	378.0	225.0	156.0	323
0.1000	336.00	211.00	715.0	355.0	236.0	536
0.0400	547.00	321.00	1,610.0	574.0	353.0	934
0.0200	750.00	413.00	2,900.0	778.0	451.0	1,340
0.0100	997.00	513.00	5,150.0	1,020.0	557.0	1,860
0.0050	1,300.00	620.00	8,980.0	--	--	--
0.0020	1,780.00	768.00	18,300.0	1,720.0	823.0	3,580

Peak-flow data used in the analysis:

Explanation of symbols and codes

> Greater than

-- none

Water	Peak	Peak-flow
year	flow	code
1960	27	--
1961	51	--
1962	346	--
1963	182	--
1964	20	--
1965	37	--
1966	78	--
1967	61	--
1968	39	--
1969	235	--
1970	111	--
1971	81	--
1972	99	--
1973	180	--
1974	143	--
1975	896	--
1976	50	--
1977	31	--
1978	95	--
1979	92	--
1980	34	--
1981	43	--
1982	140	--
1983	110	--
1984	41	--
1985	>896	--