

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05216700 O'Brien Creek near Nashwauk, Minn.

Peak-flow information:

Number of systematic peak flows in record	14
Systematic period begins	1959
Systematic period ends	1972
Length of systematic record	14
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	-0.09
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
1.8719	0.1392	-0.675

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	48

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
1.8734	0.1355	-0.235	

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	31.2	11.7	42.3	--	--	--
0.9900	34.3	14.3	45.1	--	--	--
0.9500	43.8	24.0	54.5	--	--	--
0.9000	49.7	32.1	60.5	--	--	--
0.8000	57.7	42.6	69.0	--	--	--
0.6667	66.0	52.3	78.3	--	--	--
0.5000	75.6	62.4	90.1	74.8	63.6	87.9
0.4292	79.9	66.5	95.7	--	--	--
0.2000	97.4	82.1	123.0	97.4	82.0	116.0
0.1000	110.0	92.7	149.0	111.0	91.6	135.0
0.0400	126.0	104.0	190.0	128.0	102.0	161.0
0.0200	136.0	111.0	225.0	140.0	108.0	182.0
0.0100	146.0	117.0	266.0	152.0	114.0	203.0
0.0050	156.0	122.0	312.0	--	--	--
0.0020	168.0	128.0	379.0	180.0	125.0	259.0

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
1959	88	--
1960	70	--
1961	85	--
1962	74	--
1963	48	--
1964	98	--
1965	87	--
1966	103	--
1967	120	--
1968	94	--
1969	25	*
1970	50	--
1971	68	--
1972	66	--