

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05104000 South Fork Roseau River near Malung, Minn.

Peak-flow information:

Number of systematic peak flows in record	20
Systematic period begins	1912
Systematic period ends	1946
Length of systematic record	35
Years without information	15
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.504
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
2.6081	0.4554	-0.900

Outlier criteria and number of peak flows exceeding:

Low	33.3	0
High	4946.2	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.6081	0.4554	-0.640	

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	14.6	4.0	31.9	--	--	--
0.9900	21.9	6.9	44.4	--	--	--
0.9500	61.0	26.9	104.0	--	--	--
0.9000	100.0	51.2	159.0	--	--	--
0.8000	176.0	104.0	263.0	--	--	--
0.6667	285.0	184.0	419.0	--	--	--
0.5000	453.0	306.0	683.0	542	376	782
0.4292	543.0	369.0	835.0	--	--	--
0.2000	996.0	663.0	1,720.0	1,140	800	1,630
0.1000	1,420.0	911.0	2,670.0	1,610	1,100	2,360
0.0400	1,980.0	1,220.0	4,100.0	2,260	1,460	3,500
0.0200	2,400.0	1,440.0	5,280.0	2,760	1,690	4,510
0.0100	2,820.0	1,650.0	6,510.0	3,290	1,910	5,650
0.0050	3,230.0	1,850.0	7,780.0	--	--	--
0.0020	3,760.0	2,100.0	9,490.0	4,520	2,330	8,770

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water year	Peak flow	Peak-flow code
1912	52	--
1913	872	--
1914	484	--
Gap in systematic record		
1929	425	--
1930	405	--
1931	52	--
1932	690	--
1933	246	--
1934	51	--
1935	210	--
1936	465	--
1937	337	--
1938	906	--
Gap in systematic record		
1940	400	--
1941	1,890	--
1942	1,800	--
1943	771	--
1944	448	--
1945	750	--
1946	812	--