

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05126500 Bear Island River near Ely, Minn.

Peak-flow information:

Number of systematic peak flows in record	13
Systematic period begins	1953
Systematic period ends	1977
Length of systematic record	25
Years without information	12
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	0.14
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
2.3520	0.2068	-0.986

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	116

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.3566	0.1948	-0.129

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	67.8	17.4	103	--	--	--
0.9900	76.7	22.7	113	--	--	--
0.9500	107.0	46.3	146	--	--	--
0.9000	127.0	68.8	169	--	--	--
0.8000	156.0	101.0	203	--	--	--
0.6667	189.0	135.0	244	--	--	--
0.5000	229.0	173.0	300	248	196	315
0.4292	249.0	190.0	328	--	--	--
0.2000	332.0	257.0	481	363	280	471
0.1000	401.0	307.0	654	448	334	602
0.0400	488.0	364.0	965	568	401	805
0.0200	553.0	402.0	1,280	666	451	986
0.0100	618.0	437.0	1,700	773	500	1,190
0.0050	683.0	469.0	2,140	--	--	--
0.0020	770.0	507.0	2,800	1,050	613	1,800

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

1953 182 --

1954 423 --

1955 138 --

1956 264 --

1957 338 --

1958 52 *

1959 116 --

1960 228 --

1961 242 --

1962 256 --

Gap in systematic record

1975 358 --

1976 286 --

1977 290 --