Annual Peak-Flow Frequency Analysis
For more information on the contents of this documentation, see Kessler and others (2013).

Streamgage number and name:
  05127500 Basswood River near Winton, Minn.

Peak-flow information:
Number of systematic peak flows in record	84
Systematic period begins	1926
Systematic period ends	2011
Length of systematic record	86
Years without information	2
Number of historical peak flows in record	0

Frequency analysis options:
Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	0.11
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:

Mean	Standard deviation	Skewness
3.6669	0.2131	-0.743

Low-outlier information:
Number of low outliers	1
Low-outlier threshold	1,220

Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
3.6672	0.2119	-0.415

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	1,090	581	1,460
0.9900	1,290	762	1,660
0.9500	1,970	1,460	2,350
0.9000	2,440	1,960	2,830
0.8000	3,120	2,670	3,540
0.6667	3,880	3,410	4,350
0.5000	4,810	4,290	5,370
0.4292	5,230	4,680	5,840
0.2000	7,050	6,340	7,910
0.1000	8,460	7,570	9,690
0.0400	10,100	8,930	12,100
0.0200	11,300	9,770	14,100
0.0100	12,400	10,500	16,100
0.0050	13,500	11,000	18,200
0.0020	14,900	11,700	21,200

Peak-flow data used in the analysis:

Explanation of symbols and codes

  ∗   Less than low-outlier threshold

Water year	Peak flow	Peak-flow code	Water year	Peak flow	Peak-flow code
1926	2,270	––	1965	6,140	––
1927	7,150	––	1966	7,770	––
Gap in systematic record			1967	4,580	––
1930	3,820	––	1968	9,040	––
1931	3,200	––	1969	7,970	––
1932	3,540	––	1970	7,120	––
1933	2,540	––	1971	7,260	––
1934	6,680	––	1972	7,240	––
1935	4,060	––	1973	3,920	––
1936	6,630	––	1974	6,180	––
1937	4,950	––	1975	5,520	––
1938	7,950	––	1976	7,900	––
1939	4,840	––	1977	1,990	––
1940	3,940	––	1978	5,570	––
1941	4,740	––	1979	7,290	––
1942	4,640	––	1980	3,900	––
1943	5,580	––	1981	6,840	––
1944	7,290	––	1982	6,420	––
1945	6,020	––	1983	4,260	––
1946	3,960	––	1984	5,050	––
1947	6,230	––	1985	3,550	––
1948	9,230	––	1986	5,110	––
1949	3,610	––	1987	3,420	––
1950	15,600	––	1988	8,020	––
1951	6,730	––	1989	5,250	––
1952	3,830	––	1990	6,210	––
1953	4,740	––	1991	3,150	––
1954	10,200	––	1992	5,740	––
1955	2,720	––	1993	3,300	––
1956	6,550	––	1994	5,810	––
1957	6,660	––	1995	2,240	––
1958	1,220	––	1996	7,040	––
1959	2,320	––	1997	4,300	––
1960	4,920	––	1998	2,590	––
1961	4,030	––	1999	5,420	––
1962	4,490	––	2000	3,120	––
1963	1,840	––	2001	9,050	––
1964	4,640	––	2002	1,730	––

Water year	Peak flow	Peak-flow code
2003	1,850	−−
2004	3,760	−−
2005	3,850	−−
2006	4,780	−−
2007	2,930	−−
2008	7,380	−−
2009	5,370	−−
2010	976	∗
2011	2,970	−−