

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05294000 Pomme de Terre River at Appleton, Minn.

Peak-flow information:

Number of systematic peak flows in record	78
Systematic period begins	1931
Systematic period ends	2011
Length of systematic record	81
Years without information	3
Peak flows not used in analysis	1
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.256
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
	2.8978	0.4051	-0.035

Outlier criteria and number of peak flows exceeding:

Low	51.3	0
High	12166.4	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.8978	0.4051	-0.096

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	65.7	43.0	91.8	--	--	--
0.9900	84.5	57.3	115.0	--	--	--
0.9500	166.0	123.0	212.0	--	--	--
0.9000	237.0	183.0	294.0	--	--	--
0.8000	362.0	291.0	438.0	--	--	--
0.6667	535.0	443.0	638.0	--	--	--
0.5000	802.0	673.0	956.0	797	645	985
0.4292	947.0	796.0	1,130.0	--	--	--
0.2000	1,740.0	1,440.0	2,170.0	1,720	1,380	2,160
0.1000	2,590.0	2,080.0	3,350.0	2,550	1,980	3,290
0.0400	3,920.0	3,060.0	5,330.0	3,850	2,810	5,260
0.0200	5,110.0	3,890.0	7,190.0	4,990	3,460	7,200
0.0100	6,480.0	4,820.0	9,390.0	6,300	4,140	9,580
0.0050	8,030.0	5,850.0	12,000.0	--	--	--
0.0020	10,400.0	7,370.0	16,000.0	9,950	5,730	17,300

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

D Peak result of dam break

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1931	67	--	1968	193	--
1932	212	--	1969	5,520	--
1933	195	--	1970	605	--
1934	130	--	1971	792	--
1935	380	--	1972	1,290	--
1936	720	--	1973	984	--
1937	540	--	1974	186	--
1938	268	--	1975	1,100	--
1939	850	--	1976	858	--
1940	500	--	1977	274	--
1941	272	--	1978	1,350	--
1942	819	--	1979	1,290	--
1943	3,470	--	1980	676	--
1944	461	--	1981	666	--
1945	473	--	1982	1,510	--
1946	1,200	--	1983	264	--
1947	1,800	--	1984	1,280	--
1948	2,440	--	1985	1,980	--
1949	538	--	1986	1,920	--
1950	980	--	1987	472	--
1951	1,580	--	1988	187	--
1952	5,050	--	1989	849	--
1953	755	--	1990	206	--
1954	840	--	1991	320	--
1955	565	--	1992	410	--
1956	479	--	1993	2,370	--
1957	516	--	1994	2,220	--
1958	538	--	1995	1,840	--
1959	595	--	1996	1,390	--
1960	1,270	--	1997	8,890	D
1961	148	--	1998	748	--
1962	1,360	--	1999	591	--
1963	595	--	2000	360	--
1964	525	--	2001	7,980	--
1965	2,310	--	Gap in systematic record		
1966	1,660	--	2004	401	--
1967	1,080	--	2005	1,400	--

Water year	Peak flow	Peak-flow code
2006	1,140	--
2007	1,750	--
2008	888	--
2009	3,740	--
2010	2,600	--
2011	3,170	--