

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05244000 Crow Wing River at Nimrod, Minn.

Peak-flow information:

Number of systematic peak flows in record	82
Systematic period begins	1910
Systematic period ends	2011
Length of systematic record	102
Years without information	20
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.024
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
3.1010	0.2057	-0.060

Outlier criteria and number of peak flows exceeding:

Low	312.2	0
High	5098.5	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.1010	0.2057	-0.050

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	364	296	429	--	--	--
0.9900	412	341	480	--	--	--
0.9500	575	496	650	--	--	--
0.9000	686	603	764	--	--	--
0.8000	848	761	932	--	--	--
0.6667	1,030	940	1,130	--	--	--
0.5000	1,270	1,160	1,380	1,280	1,150	1,420
0.4292	1,380	1,260	1,510	--	--	--
0.2000	1,880	1,710	2,100	1,900	1,690	2,130
0.1000	2,310	2,070	2,620	2,340	2,040	2,680
0.0400	2,870	2,530	3,340	2,920	2,470	3,460
0.0200	3,290	2,870	3,900	3,380	2,760	4,130
0.0100	3,730	3,220	4,490	3,850	3,040	4,870
0.0050	4,180	3,560	5,100	--	--	--
0.0020	4,790	4,030	5,960	5,020	3,650	6,900

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

Water	Peak	Peak-flow	Water	Peak	Peak-flow
year	flow	code	year	flow	code
1910	1,090	--	1963	1,140	--
1911	958	--	1964	1,600	--
1912	641	--	1965	2,890	--
1913	859	--	1966	2,640	--
1914	1,850	--	1967	2,160	--
Gap in systematic record			1968	2,750	--
1931	440	--	1969	2,200	--
1932	552	--	1970	1,750	--
1933	1,150	--	1971	1,800	--
1934	480	--	1972	1,580	--
1935	547	--	1973	1,320	--
1936	622	--	1974	3,700	--
1937	879	--	1975	2,020	--
1938	1,220	--	1976	701	--
1939	900	--	1977	598	--
1940	1,070	--	1978	1,190	--
1941	1,150	--	1979	3,610	--
1942	1,330	--	1980	1,070	--
1943	2,330	--	1981	675	--
1944	2,330	--	1982	1,800	--
1945	1,290	--	1983	1,250	--
1946	1,530	--	1984	1,120	--
1947	1,960	--	1985	2,070	--
1948	1,370	--	1986	1,720	--
1949	1,700	--	1987	994	--
1950	2,200	--	Gap in systematic record		
1951	982	--	1992	605	--
1952	1,800	--	1993	1,300	--
1953	1,730	--	1994	1,060	--
1954	1,510	--	1995	1,900	--
1955	1,040	--	1996	1,520	--
1956	1,040	--	1997	2,050	--
1957	1,120	--	1998	1,290	--
1958	498	--	1999	1,900	--
1959	833	--	2000	883	--
1960	1,260	--	2001	1,730	--
1961	839	--	2002	995	--
1962	2,750	--	2003	735	--

Water year	Peak flow	Peak-flow code
2004	704	--
2005	1,080	--
2006	1,170	--
2007	1,160	--
2008	989	--
2009	1,680	--
2010	990	--
2011	1,440	--