

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05293000 Yellow Bank River near Odessa, Minn.

Peak-flow information:

Number of systematic peak flows in record	72
Systematic period begins	1940
Systematic period ends	2011
Length of systematic record	72
Years without information	0
Number of historical peak flows in record	0

Frequency analysis options:

Method	Bulletin 17B
Skew option	Weighted
Generalized skew	-0.302
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
3.0915	0.5119	-0.717

Outlier criteria and number of peak flows exceeding:

Low	40.3	0
High	37795.2	0

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
3.0915	0.5119	-0.551

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	32.4	17.2	53.0	--	--	--
0.9900	50.0	28.3	77.9	--	--	--
0.9500	150.0	99.2	210.0	--	--	--
0.9000	259.0	182.0	345.0	--	--	--
0.8000	479.0	360.0	613.0	--	--	--
0.6667	817.0	639.0	1,030.0	--	--	--
0.5000	1,380.0	1,090.0	1,740.0	1,360	1,040	1,790
0.4292	1,690.0	1,340.0	2,140.0	--	--	--
0.2000	3,390.0	2,640.0	4,530.0	3,360	2,600	4,340
0.1000	5,130.0	3,880.0	7,160.0	5,100	3,880	6,710
0.0400	7,650.0	5,610.0	11,200.0	7,690	5,530	10,700
0.0200	9,690.0	6,960.0	14,600.0	9,860	6,700	14,500
0.0100	11,800.0	8,340.0	18,300.0	12,300	7,860	19,100
0.0050	14,000.0	9,730.0	22,200.0	--	--	--
0.0020	17,000.0	11,600.0	27,600.0	18,600	10,300	33,400

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
1940	1,140	--	1976	612	--
1941	298	--	1977	1,320	--
1942	1,400	--	1978	3,030	--
1943	3,000	--	1979	3,190	--
1944	846	--	1980	755	--
1945	1,020	--	1981	64	--
1946	1,580	--	1982	1,750	--
1947	5,890	--	1983	495	--
1948	3,460	--	1984	3,290	--
1949	419	--	1985	2,620	--
1950	3,100	--	1986	4,070	--
1951	4,080	--	1987	264	--
1952	6,260	--	1988	228	--
1953	2,230	--	1989	2,080	--
1954	2,190	--	1990	220	--
1955	475	--	1991	2,010	--
1956	513	--	1992	3,660	--
1957	1,870	--	1993	1,910	--
1958	382	--	1994	2,900	--
1959	89	--	1995	3,140	--
1960	1,600	--	1996	3,040	--
1961	209	--	1997	6,770	--
1962	1,690	--	1998	1,300	--
1963	1,350	--	1999	1,430	--
1964	378	--	2000	70	--
1965	3,540	--	2001	5,850	--
1966	1,400	--	2002	1,300	--
1967	1,440	--	2003	299	--
1968	211	--	2004	98	--
1969	6,970	--	2005	1,320	--
1970	828	--	2006	777	--
1971	1,050	--	2007	3,710	--
1972	2,530	--	2008	5,040	--
1973	1,040	--	2009	4,170	--
1974	183	--	2010	5,780	--
1975	660	--	2011	4,180	--