Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:
> 05106000 Sprague Creek near Sprague, Manitoba, Canada

Peak-flow information:
Number of systematic peak flows in record	65
Systematic period begins	1929
Systematic period ends	2011
Length of systematic record	83
Years without information	18
Number of historical peak flows in record	0

Frequency analysis options:
Method	Expected moments algorithm (EMA)
Skew option	Weighted
Generalized skew	-0.494
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:

Mean	Standard deviation	Skewness
2.7420	0.4497	-0.742

Outlier criteria and number of peak flows exceeding:

Low	28.4	1
High	9249.3	0

Expected moments algorithm (EMA) Final analysis results:

Moments of the common logarithms of the peak flows:

Mean	Standard deviation	Skewness
2.7388	0.4601	-0.735

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	NA	NA	NA
0.9900	NA	NA	NA
0.9500	79.2	29.6	127
0.9000	133.0	67.4	197
0.8000	238.0	152.0	329
0.6667	390.0	277.0	519
0.5000	623.0	467.0	812
0.4292	746.0	567.0	966
0.2000	1,360.0	1,060.0	1,750
0.1000	1,910.0	1,500.0	2,550
0.0400	2,610.0	2,000.0	3,820
0.0200	3,120.0	2,270.0	4,920
0.0100	3,610.0	2,480.0	6,160
0.0050	4,080.0	2,630.0	7,580
0.0020	4,650.0	2,760.0	9,780

Peak-flow data used in the analysis:

Explanation of symbols and codes

−−   none

∗   Less than low-outlier threshold

Water year	Peak flow	Peak-flow code	Water year	Peak flow	Peak-flow code
1929	170	−−	1962	862	−−
1930	1,040	−−	1963	705	−−
1931	165	−−	1964	465	−−
1932	406	−−	1965	1,250	−−
1933	580	−−	1966	932	−−
1934	26	∗	1967	1,100	−−
1935	160	−−	1968	861	−−
1936	612	−−	1969	867	−−
1937	1,560	−−	1970	1,180	−−
1938	745	−−	1971	344	−−
1939	30	−−	1972	476	−−
1940	72	−−	1973	372	−−
1941	1,880	−−	1974	2,560	−−
1942	2,070	−−	1975	492	−−
1943	804	−−	1976	190	−−
1944	1,080	−−	1977	100	−−
1945	1,060	−−	1978	655	−−
1946	301	−−	1979	963	−−
1947	1,470	−−	1980	185	−−
1948	1,010	−−	1981	312	−−
1949	416	−−	Gap in systematic record		
1950	1,470	−−	2000	759	−−
1951	389	−−	2001	1,200	−−
1952	69	−−	2002	8,440	−−
1953	235	−−	2003	405	−−
1954	514	−−	2004	2,160	−−
1955	557	−−	2005	1,080	−−
1956	862	−−	2006	760	−−
1957	422	−−	2007	813	−−
1958	165	−−	2008	527	−−
1959	595	−−	2009	1,470	−−
1960	708	−−	2010	1,050	−−
1961	115	−−	2011	1,210	−−