

Annual Peak-Flow Frequency Analysis

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

Streamgage number and name:

05129290 Gold Portage Outlet from Kabetogama Lake near Ray, Minn.

Peak-flow information:

Number of systematic peak flows in record	26
Systematic period begins	1983
Systematic period ends	2011
Length of systematic record	29
Years without information	3
Number of historical peak flows in record	0

Frequency analysis options:

Method	Expected moments algorithm (EMA)
Skew option	Streamgage
Low-outlier method	Single Grubbs-Beck test

EMA systematic record analysis results:

Moments of the common logarithms of the peak flows:

	Standard		
Mean	deviation	Skewness	
2.8707	0.0995	0.245	

Low-outlier information:

Number of low outliers	1
Low-outlier threshold	464

Final analysis results:

Moments of the common logarithms of the peak flows:

	Standard	
Mean	deviation	Skewness
2.8707	0.0995	0.245

Annual frequency curve at selected exceedance probabilities:

Exceedance probability	Peak estimate	Lower-95 level	Upper-95 level
0.9950	434	271	513
0.9900	454	300	523
0.9500	518	399	574
0.9000	557	470	616
0.8000	611	546	674
0.6667	668	603	735
0.5000	736	665	814
0.4292	766	693	851
0.2000	897	810	1,040
0.1000	1,000	895	1,270
0.0400	1,130	991	1,710
0.0200	1,220	1,050	2,030
0.0100	1,320	1,110	2,390
0.0050	1,410	1,160	2,820
0.0020	1,540	1,230	3,500

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

* Less than low-outlier threshold

Water	Peak	Peak-flow
year	flow	code
1983	630	--
1984	620	--
1985	863	--
1986	738	--
1987	788	--
1988	897	--
1989	772	--
1990	726	--
1991	718	--
1992	742	--
1993	721	--
1994	765	--
Gap in systematic record		
1998	464	--
1999	691	--
2000	668	--
2001	1,310	--
2002	985	--
2003	385	*
2004	680	--
2005	791	--
2006	692	--
2007	653	--
2008	1,200	--
2009	772	--
2010	776	--
2011	713	--