

Annual Peak-Flow Frequency Analysis

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

Streamgauge number and name:

05475800 Des Moines River tributary near Jackson, Minn.

Peak-flow information:

| | |
|---|------|
| Number of systematic peak flows in record | 26 |
| Systematic period begins | 1960 |
| Systematic period ends | 1985 |
| Length of systematic record | 26 |
| Years without information | 0 |
| Number of historical peak flows in record | 0 |

Frequency analysis options:

| | |
|------------------------------------|-------------------------------|
| Method | Bulletin 17B |
| Skew option | Weighted |
| Generalized skew | -0.16 |
| 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 |
|--|--------|--------------------|----------|
| | 1.3621 | 0.3896 | -0.467 |

Outlier criteria and number of peak flows exceeding:

| | | |
|------|-------|---|
| Low | 2.4 | 0 |
| High | 217.2 | 0 |

Bulletin 17B Final analysis results:

Moments of the common logarithms of the peak flows:

| | Standard | |
|--------|-----------|----------|
| Mean | deviation | Skewness |
| 1.3621 | 0.3896 | -0.295 |

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 | 1.8 | 0.8 | 3.1 | -- | -- | -- |
| 0.9900 | 2.4 | 1.1 | 3.9 | -- | -- | -- |
| 0.9500 | 4.9 | 2.8 | 7.3 | -- | -- | -- |
| 0.9000 | 7.1 | 4.4 | 10.1 | -- | -- | -- |
| 0.8000 | 11.0 | 7.4 | 14.9 | -- | -- | -- |
| 0.6667 | 16.2 | 11.7 | 21.7 | -- | -- | -- |
| 0.5000 | 24.1 | 17.9 | 32.5 | 25.6 | 18.4 | 35.7 |
| 0.4292 | 28.2 | 21.1 | 38.5 | -- | -- | -- |
| 0.2000 | 49.5 | 36.3 | 73.5 | 54.0 | 38.6 | 75.6 |
| 0.1000 | 70.4 | 50.0 | 112.0 | 78.9 | 54.7 | 114.0 |
| 0.0400 | 101.0 | 68.5 | 175.0 | 118.0 | 77.0 | 180.0 |
| 0.0200 | 126.0 | 83.0 | 231.0 | 151.0 | 93.6 | 244.0 |
| 0.0100 | 152.0 | 97.8 | 295.0 | 190.0 | 112.0 | 323.0 |
| 0.0050 | 181.0 | 113.0 | 367.0 | -- | -- | -- |
| 0.0020 | 222.0 | 134.0 | 474.0 | 296.0 | 152.0 | 574.0 |

Peak-flow data used in the analysis:

Explanation of symbols and codes

-- none

| Water | Peak | Peak-flow |
|-------|-------|-----------|
| year | flow | code |
| 1960 | 21.0 | -- |
| 1961 | 5.9 | -- |
| 1962 | 69.0 | -- |
| 1963 | 49.0 | -- |
| 1964 | 16.0 | -- |
| 1965 | 38.0 | -- |
| 1966 | 41.0 | -- |
| 1967 | 52.0 | -- |
| 1968 | 3.0 | -- |
| 1969 | 134.0 | -- |
| 1970 | 50.0 | -- |
| 1971 | 59.0 | -- |
| 1972 | 15.0 | -- |
| 1973 | 7.6 | -- |
| 1974 | 42.0 | -- |
| 1975 | 22.0 | -- |
| 1976 | 31.0 | -- |
| 1977 | 23.0 | -- |
| 1978 | 16.0 | -- |
| 1979 | 29.0 | -- |
| 1980 | 39.0 | -- |
| 1981 | 5.9 | -- |
| 1982 | 6.2 | -- |
| 1983 | 25.0 | -- |
| 1984 | 12.0 | -- |
| 1985 | 27.0 | -- |