

DFO Flood Magnitude Scale:

- The Flood Magnitude value is a measure of “how severe” a flood is, as a strictly hydrological occurrence (no assessment of damage is implied). “0” is the smallest reported value (discharge is below the 1.5 y recurrence interval discharge; no flooding). “10” is the largest, this is the flood of record (1998-present). A value of 8 indicates that the flood runoff volume is .8 that of the flood of record (the measured current flooding/flood of record) ratio is multiplied by 10).
- To calculate the flood magnitude, total runoff volumes are measured for the flood hydrograph above the bankfull discharge, using as this threshold discharge the 1.5 y recurrence interval flow. The reported current magnitude value is the runoff volume accumulated so far, compared to the flood volume of record, times 10.
- In the algorithm used to automatically calculate the flood magnitude from the River Watch discharge information, a 30 day window is used for such accumulation: to span the duration of most floods, and avoid incorporating runoff volumes from earlier floods.
- To obtain total runoff volume, daily runoff values are summed once discharge exceeds this threshold, and the sum is multiplied by contributing watershed area to measure total flood runoff volume (m^3). The volume increases each day until discharge recedes below the threshold.
- A longer duration flood exhibits a higher flood magnitude. Also, floods reaching higher peak discharges will exhibit higher magnitudes. Flood volumes will be larger from larger watersheds (other factors being equal), but the magnitude value compares flood volume to the flood of record: watershed and river size do not affect the magnitude number.