Terminology

Acre-foot: The volume of water covering 1 acre to a depth of 1 foot.

Base Flow: The flow in a channel due to soil moisture or ground water.

Class Interval: A range into which data may be grouped (a sub-range of the total range).

Contour (for elevation or precipitation): A line connecting points on a land surface having the same elevation or precipitation.

Datum: Geographical reference frame, horizontal plane based on a vertical benchmark (such as mean sea level)

Discharge: (See **Streamflow**)

Drainage Basin: The land zone that contributes water to the runoff past a given point on a stream.

Exceedence Probability: The probability that a specified discharge will be exceeded.

Frequency Factor Table: Table used to determine the frequency factor (K) in a Log Pearson Type 3 statistical distribution. To use the table you need to calculate the skewness coefficient and choose a desired return period. K is a function of these two variables and is listed accordingly in the table.

Gaging Station: An installation at a stream site where discharge and water levels are measured (see also streamgaging).

Gumbel Distribution: A statistical distribution that originated from the theory of extremes. This distribution has a downfall in that the function is unbounded on either side, which could lead to the calculation of negative flows (however, this is unlikely).

Hydrograph: A chronological graphic record of stream discharge or water level (stage) at a given point on a stream (a graph of discharge or stage vs. time).

Infiltration: Movement of water from the land surface into the soil.

K Values: Values found using the frequency factor table; this constant determines the shape of the flood frequency diagram (its asymmetry).

Log-Normal Distribution: Statistical distribution for which the log of the random variable is distributed normally.

Normal Distribution: Statistical distribution in which data are represented by a bell-shaped curve. The distinct shape and position of the curve are determined by the mean and the standard deviation.

Orographic Effect: Rainfall that results from or is enhanced by mechanical lifting of an air mass over mountains.

Overland Flow: Flow of water across the land surface in a down-gradient direction.

Period of Record: The time period for which flow measurements have been recorded. The period of record may be continuous or interrupted by intervals during which no data were collected. For USGS gages, it is usually listed at the top of the page with other key information about the gage.

Population: Complete set of persons, places, or things under statistical analysis.

Porous Medium: Material that will allow water to flow through it. Sand, soil, and some types of rock are typical geologic materials that act as porous media.

Precipitation: Water that falls to the earth in the form of rain, snow, hail, or sleet.

Rating Curve: Relationship between water stage (elevation) and water discharge in a channel.

Recurrence Interval: Time interval in which an event can be expected to occur once on the average.

Reservoir: A man-made storage area for flood control of water supply.

Return Period and Exceedence Probability: An event has a return period (or recurrence interval) of T years if its magnitude is equaled or exceeded once, on the average, every T years. The reciprocal of the return period is the exceedance probability of the event, that is, the probability that the event is equaled or exceeded in any one year. For example, the 50-year flood has a probability of 0.02 or 2%, of being equaled or exceeded in any single year. It is important to note that the return period implies nothing about the actual time sequence of an event. The 50-year flood does not occur once every 50 years; it is expected, for example, that on the average , about twenty 50-year floods can be expected to be experienced during a 1,000 year period.

Skewness: Statistical term describing the third central moment about the mean, a measure of asymmetry.

Skewness Coefficient: Statistical term describing the third central moment about the mean (skewness) divided by the cube of standard deviation. The skewness coefficient is used with return period in the frequency factor table to determine the frequency factor K, which subsequently determines the shape of the flood frequency diagram (asymmetry).

Standard Deviation: Statistical term describing the measure of spread about the mean for a data set, calculated by taking the square root of the average of the deviations squared (variance).

Streamflow (Discharge): The rate of water flow (volume/unit time) passing a given cross section of a stream. Some common units include:

- cubic feet per second, cfs, ft^3/s
- cubic meters per second, m^3/s
- gallons per minute, gpm

Streamgaging: Two types of field measurements form the basis for all streamflow work: (1) river stage (water surface elevation) and (2) cross-sectional area. The location along the river where these measurements are taken is referred to as a gaging site. A permanent facility at this site is referred to as a gaging station. Determination of river discharge requires that the velocity and cross-section area be measured at the station in some systematic manner. This process is referred to as streamgaging.

Variance: Statistical term describing the second central moment about the mean, a measure of scale or width, calculated by taking the average of the deviations squared.

Water Year: Time convention used by the USGS for compiling and reporting their streamflow data. The water year for Oregon (and United States) is from October 1^{st} to September 30^{th}. For example water year 2000 is from October 1, 1999 to September 30, 2000. For Oregon and Western U.S., the water year splits data during a relatively dry period during which streamflow does not change significantly from day to day (end of summer, early autumn), rather than in the midst of the wet season during which flows can change rapidly from day to day.

Watershed: The area of land that drains to a single outlet and is separated from other watersheds by a topographic or subsurface drainage divide.

Watershed Divide: A line or border that defines a watershed topographically.

Sources of Data: The main sources for data on streamflow in Oregon are the US Geological Survey (U.S. Department of Interior) and the Oregon Water Resources Department.

For a more detailed and complete discussion of hydrologic terms, please refer to the following text:

Bedient, Philip B. and Wayne C. Huber. Hydrology and Floodplain Analysis. Prentice-Hall, Inc., Upper Saddle River, 2002.