

Glossary

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A

Acre-foot

The amount of water required to cover one acre to a depth of one foot. An acre-foot equals 326,851 gallons, or 43,560 cubic feet.

Action Stage

Stage which, when reached by a rising stream, represents the level where the NWS or a customer/partner needs to take some type of mitigation action in preparation for possible significant hydrologic activity. Could be the same as forecast issuance stage.

Active (Usable) Storage Capacity	The total amount of reservoir capacity normally available for release from a reservoir below the maximum storage level. It is total or reservoir capacity minus inactive storage capacity. More specifically, it is the volume of water between the outlet works and the spillway crest.
Active Conservation Storage	The portion of water stored in a reservoir that can be released for all useful purposes such as municipal water supply, power, irrigation, recreation, fish, wildlife, etc. Conservation storage is the volume of water stored between the inactive pool elevation and flood control stage.
Annual Flood	The maximum discharge peak during a given water year (October 1 - September 30).
Area-Capacity Curve	A graph showing the relation between the surface area of the water in a reservoir, the corresponding volume, and elevation.
Average Discharge	In the annual series of the Geological Survey's reports on surface-water supply--the arithmetic average of all complete water years of record whether or not they are consecutive. Average discharge is not published for less than 5 years of record. The term "average" is generally reserved for average of record and "mean" is used for averages of shorter periods, namely, daily mean discharge.

B

Backflow	The backing up of water through a conduit or channel in the direction opposite to normal flow.
Backwater	Water backed up or retarded in its course as compared with its normal or natural condition of flow. In stream gaging, a rise in stage produced by a temporary obstruction such as ice or weeds, or by the flooding of the stream below. The difference between the observed stage and that indicated by the stage-discharge relation, is reported as backwater.
Backwater Effect	The effect which a dam or other obstruction or construction has in raising the surface of the water upstream from it.
Backwater Flooding	Upstream flooding caused by downstream conditions such as channel restriction and/ or high flow in a downstream confluence stream.

Bank	The margins of a channel. Banks are called right or left as viewed facing in the direction of the flow.
Bank Storage	The water absorbed into the banks of a stream channel, when the stages rise above the water table in the bank formations, then returns to the channel as effluent seepage when the stages fall below the water table.
Bankfull Stage/Elevation	An established river stage/water surface elevation at a given location along a river which is intended to represent the maximum water level that will not overflow the river banks or cause any significant damages from flooding. (See also Flood stage.) Bankfull stage is a hydraulic term, whereas flood stage implies damage.)
Base Discharge (for peak discharge)	In the Geological Survey's annual reports on surface-water supply, the discharge above which peak discharge data are published. The base discharge at each station is selected so that an average of about three peaks a year will be presented. (See also Partial-duration flood series.)
Base Flood	The national standard for flood plain management is the base, or one percent chance flood. This flood has at least one chance in 100 of occurring in any given year. It is also called a 100 year flood.
Basin	An area having a common outlet for its surface runoff.
Basin Boundary	The topographic dividing line around the perimeter of a basin, beyond which overland flow (i.e.; runoff) drains away into another basin.
Black Ice	Transparent ice formed in rivers and lakes, or on roads and bridges.
Border Ice	An ice sheet in the form of a long border attached to the bank or shore.; shore ice.
Braided Stream	Characterized by successive division and rejoining of streamflow with accompanying islands. A braided stream is composed of anabranches.
Braiding of River Channels	Successive division and rejoining (of riverflow) with accompanying islands is the important characteristic denoted by the synonymous terms, braided or anastomosing stream. A braided stream is composed of anabranches.

Brash Ice	Accumulation of floating ice made up of fragments not more than 2 meters across; the wreckage of other forms of ice.
Breach	The failed opening in a dam.
Breakup	The time when a river whose surface has been frozen from bank to bank for a significant portion of its length begins to change to an open water flow condition. Breakup is signaled by the breaking of the ice and often associated with ice jams and flooding.
Breakup Date	Date on which a body of water is first observed to be entirely clear of ice and remains clear thereafter.
Breakup Jam	Ice jam that occurs as a result of the accumulation of broken ice pieces.
Breakup Period	The period of disintegration of an ice cover.
Bubbler Gage	A water stage recording device that is capable of attaching to a LARC for data automation purposes.

C

CFS (Cubic Feet per Second)	The flow rate or discharge equal to one cubic foot (of water, usually) per second. This rate is equivalent to approximately 7.48 gallons per second. This is also referred to as a second-foot.
Cfs-Day	The volume of water discharged in twenty four hours, with a flow of one cubic foot per second is widely used; 1 cfs-day is $24 \times 60 \times 60 = 86,000$ cubic feet, 1.983471 acre-feet, or 646,317 gallons. The average flow in cubic feet per second for any time period is the volume of flow in cfs-days.
Cfsm	(cubic feet per second per square mile). The average number of cubic feet of water per second flowing from each square mile of area drained by a stream, assuming that the runoff is distributed uniformly in time and area.

Channel (watercourse)	An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of water. River, creek, run, branch, anabranch, and tributary are some of the terms used to describe natural channels. Natural channels may be single or braided (see Braiding of river channels). Canal and floodway are some of the terms used to describe artificial channels.
Channelization	The modification of a natural river channel; may include deepening, widening, or straightening.
COE	U.S. Army Corps of Engineers
Columnar Ice	Ice consisting of columnar shaped grain. The ordinary black ice is usually columnar-grained.
Congressional Organic Act of 1890	The act that assigned the responsibility of river and floor forecasting for the benefit of the general welfare of the Nation's people and economy to the Weather Bureau, and subsequently the National Weather Service.
Conservation Storage	Storage of water for later release for useful purposes such as municipal water supply, power, or irrigation in contrast with storage capacity used for flood control.
Consolidated Ice Cover	Ice cover formed by the packing and freezing together of floes, brash ice and other forms of floating ice.
Contents	The volume of water in a reservoir. Unless otherwise indicated reservoir content is computed on the basis of a level pool and does not include bank storage.
Control	<p>A natural constriction of the channel, a long reach of the channel, a stretch of rapids, or an artificial structure downstream from a gaging station that determines the stage-discharge relation at the gage.</p> <p>A control may be complete or partial. A complete control exists where the stage-discharge relation at a gaging station is entirely independent of fluctuations in stage downstream from the control. A partial control exists where downstream fluctuations have some effect upon the stage-discharge relation at a gaging station. A control, either partial or complete, may also be shifting. Most natural controls are shifting to a degree, but a shifting control exists where the stage-discharge relation experiences frequent changes owing to impermanent bed or banks.</p>

Corn Snow Ice	Rotten granular ice.
County Warning Forecast Area	CWFA. The area (aggregation of counties, or parishes and sometimes portions of counties, or parishes) served by a WFO for which weather forecast and warning services are provided.
Crack	A separation formed in an ice cover or floe that does not divide it into two or more pieces.
Creek	A small stream of water which serves as the natural drainage course for a drainage basin of nominal, or small size. The term is a relative one as to size, some creeks in the humid section would be called rivers if they occurred in the arid portion.
Crest	1) The highest stage or level of a flood wave as it passes a point. 2) The top of a dam, dike, spillway, or weir, to which water must rise before passing over the structure.
Crest (Top) of Dam	The elevation of the uppermost surface of a dam excluding any parapet walls, railings, etc.
Crest Gage	A gage used to obtain a record of flood crests at sites where recording gages are installed.
Cubic Feet Per Second	A unit expressing rates of discharge. One cubic foot per second is equal to the discharge through a rectangular cross section, 1 foot wide by 1 foot deep, flowing at an average velocity of 1 foot per second. It is also approximately 7.48 gallons per second.
Cusec	This abbreviation for cubic foot per second, common in the British Commonwealth countries (except Canada), is not used by the U.S. Geological Survey; instead, cfs is used.
Cycle	A regularly recurring succession of events such as the cycle of the seasons. Use of cycle to describe a group of wet years followed or preceded by a group of dry years is to be avoided.

D

Daily Flood Peak	The maximum mean daily discharge occurring in a stream during a given flood event.
Dam	Any artificial barrier which impounds or diverts water. The dam is generally hydrologically significant if it is 1.25 feet or more in height from the natural bed of the stream and has a storage of at least 15 acre-feet.

Dam Failure	Catastrophic event characterized by the sudden, rapid, and uncontrolled release of impounded water.
Day-Second Feet	Often abbreviated as SDF. See Second-Day Feet.
DCP (Data Collection Platform)	An electronic device that connects to a river or rainfall gage that records data from the gage and at pre-determined times transmits that data through a satellite to a remote computer.
Dead Storage	The volume in a reservoir below the lowest controllable level.
Deformed Ice	A general term for ice which has been squeezed together and forced upwards and downwards in places. Subdivisions are rated ice, ridge ice, hummocked ice, and other similar deformations.
Delta	An alluvial deposit, often in the shape of the Greek letter "delta", which is formed where a stream drops its debris load on entering a body of quieter water.
Dendrites	Thin branch-like growth of ice on the water surface.
Dendritic	The form of the drainage pattern of a stream and its tributaries when it follows a treelike shape, with the main trunk, branches, and twigs corresponding to the main stream, tributaries, and subtributaries, respectively, of the stream.
Density of Snow	The ratio, expressed as a percentage, of the volume which a given quantity of snow would occupy if it were reduced to water, to the volume of the snow. When a snow sampler is used, it is the ratio expressed as percentage of the scale reading on the sampler to the length of the snow core or sample.
Depletion	The progressive withdrawal of water from surface- or ground-water reservoirs at a rate greater than that of replenishment. (see Recession curve and streamflow depletion.)
Depth of Runoff	The total runoff from a drainage basin, divided by its area. For convenience in comparing runoff with precipitation, the term is usually expressed in inches of depth during a given period of time over the drainage area or acre-feet per square mile.
Diffuse Ice	Poorly defined ice edge limiting an area of dispersed ice; usually on the leeward side of an area of floating ice.
Direct Flood Damage	The damage done to property, structures, goods, etc., by a flood as measured by the cost of replacement and repairs.

Direct Runoff	The runoff entering stream channels promptly after rainfall or snowmelt. Superposed on base runoff, it forms the bulk of the hydrograph of a flood. See also surface runoff. The terms base runoff and direct runoff are time classifications of runoff. The terms ground-water runoff and surface runoff are classifications according to source.
Discharge	<p>The rate at which water passes a given point. Discharge is expressed in a volume per time with units of L^3/T. Discharge is often used interchangeably with streamflow.</p> <p>The data in the reports of the Geological Survey on surface water represent the total fluids measured. Thus, the terms discharge, streamflow, and runoff represent water with the solids dissolved in it and the sediment mixed with it. Of these terms, discharge is the most comprehensive. The discharge of drainage basins is distinguished as follows:</p> <ul style="list-style-type: none"> • Yield - Total water runoff or crop; includes runoff plus underflow. • Runoff - That part of water yield that appears in streams. • Streamflow - The actual flow in streams, whether or not subject to regulation, or underflow. <p>Each of these terms can be reported in total volumes (such as acre-feet) or time rates (such as cubic feet per second or acre-feet per year). The differentiation between runoff as a volume and streamflow as a rate is not accepted.</p>
Discharge Curve	A curve that expresses the relation between the discharge of a stream or open conduit at a given location and the stage or elevation of the liquid surface at or near that location. Also called Rating Curve and Discharge Rating Curve.
Discharge Rating Curve	See Stage discharge relation.
Discharge Table	<ol style="list-style-type: none"> 1) A table showing the relation between two mutually dependant quantities or variable over a given range of magnitude. 2) A table showing the relation between the gage height and the discharge of a stream or conduit at a given gaging station. Also called a Rating Table.
Distribution Graph	A unit hydrograph of direct runoff modified to show the proportions of the volume of runoff that occurs during successive equal units of time. Also called a distributionhydrograph.
Diversion	The taking of water from a stream or other body of water into a canal, pipe, or other conduit.

Divide	The high ground that forms the boundary of a watershed. A divide is also called a ridge.
DNRC	Department of Natural Resources & Conservation
Drainage Area	An area having a common outlet for its surface runoff (also see Watershed and Catchment Area).
Drainage Basin	A part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.
Drainage Divide	The boundary line, along a topographic ridge or along a subsurface formation, separating two adjacent drainage basins.
Drifting Ice	Pieces of floating ice moving under the action of wind and/ or currents.
Drought	<p>A period of deficient precipitation or runoff extending over an indefinite number of days, but with no set standard by which to determine the amount of deficiency needed to constitute a drought. Thus, there is no universally accepted quantitative definition of drought; generally, each investigator establishes his own definition. The following paragraph discusses the problem of defining a drought:</p> <p><i>When in an area that is ordinarily classed as humid, natural vegetation becomes desiccated or defoliates unseasonably and crops fail to mature owing to lack of precipitation, or when precipitation is insufficient to meet the needs of established human activities, drought conditions may be said to prevail. Although water for irrigation or other uses in arid areas is always limited, special shortages in such areas are also regarded as droughts. Unsatisfactory distribution of precipitation throughout the year may be as effective a factor in causing a drought as a shortage in the total amount. Temperature and wind may also play an important part, especially in relation to the damage done.</i></p>
Drought Index	Computed value which is related to some of the cumulative effects of a prolonged and abnormal moisture deficiency. An index of hydrological drought corresponding to levels below the mean in streams, lakes, and reservoirs.
Dry Crack	Crack visible at the surface but not going right through the ice cover, and therefore it is dry.
Duration of Ice Cover	The time from freeze-up to break-up of an ice cover.

Dynamic Ice

Pressure due to a moving ice cover or drifting ice.

E

E-19

Report on River Gage Station. A report to be completed every 5 - 10 years providing a complete history of a river station and all gages that have been used for public forecasts since the establishment of the station. Should be updated anytime a significant change occurs at a forecast point.

Embankment

Fill material, usually earth or rock, placed with sloping sides and usually with length greater than height. All dams are types of embankments.

Emergency Action Plan

A predetermined plan of action to be taken to reduce the potential for property damage and loss of life in an area affected by a dam break or excessive spillway release.

Emergency Services

Services provided in order to minimize the impact of a flood that is already happening. These measures are the responsibility of city, or county emergency management staff and the owners or operators of major, or critical facilities. Some examples of emergency services are flood warning and evacuation, flood response, and post flood activities.

Ensemble Hydrologic Forecasting

A process whereby a continuous hydrologic model is successively executed several times for the same forecast period by use of varied data input scenarios, or a perturbation of a key variable state for each model run. A common method employed to obtain a varied data input scenario is to use the historical meteorological record, with the assumption that several years of observed data covering the time period beginning on the current date and extending through the forecast period comprises a reasonable estimate of the possible range of future conditions.

Erosion

Wearing away of the lands by running water, glaciers, winds, and waves, can be subdivided into three process: Corrasion, Corrosion, and Transportation. Weathering, although sometimes included here, is a distant process which does not imply removal of any material.

ESP

Extended Streamflow Prediction

Evaporation

Process by which liquid water is converted into water vapor.

Evaporation Rate	The quantity of water, expressed in terms of depth of liquid water, which is evaporated from a given surface per unit of time. It is usually expressed in inches depth, per day, month, or year.
Evapotranspiration	Water withdrawn from a land area by evaporation from water surfaces and moist soil and plant transpiration. It is a coined word; probably the first recorded use is on page 296 of the Transactions of the American Geophysical Union, part 2, 1934.
Excess Rain	Effective rainfall in excess of infiltration capacity.
Exclusive Flood Control Storage Capacity	The space in a reservoir reserved for the sole purpose of regulating flood inflows to abate flood damage.

F

Face	The external surface of a structure, such as the surface of a dam.
Federal Emergency Mgmt Agency	FEMA. An agency of the federal government having responsibilities in hazzard mitigation; FEMA also administers the National Flood Insurance Program.
Firn (Snow)	Old snow on top of glaciers, granular and compact and not yet converted into ice. It is a transitional stage between snow and ice. Also called Neve.
Firn Line	The highest level to which the fresh snow on a glacier's surface retreats during the melting season. The line separating the accumulation area from the ablation area.
Fischer & Porter Punched Tape Recorder Gage	A precipitation gage which converts weight into a code disk position. The code disk position is then punched on paper tape in a binary decimal format suitable for automatic machine processing.
Flash Flood	A flood which follows within a few hours (usually less than 6 hours) of heavy or excessive rainfall, dam or levee failure, or the sudden release of water impounded by an ice jam.
Flash Flood Guidance (FFG)	An internal product produced by the RFCs containing rainfall threshold values which must be exceeded in order to produce a flash flood.
Flash Flood Statement (FFS)	A statement by the NWS which provides follow-up information on flash flood watches and warnings.

Flash Flood Table	A table of pre-computed forecast crest stage values for small streams for a variety of antecedent moisture conditions and rain amounts. Soil moisture conditions are often represented by flash flood guidance values. In lieu of crest stages, categorical representations of flooding, e.g., minor, moderate, etc. may be used on the tables.
Flash Flood Warning (FFW)	A warning by the NWS issued to warn of flash flooding that is imminent or occurring.
Flash Flood Watch (FFA)	A statement by the NWS that alerts communities to the possibility of flash flooding in specified areas.
Flashboards	A length of timber, concrete, or steel placed on the crest of a spillway to raise the retention water level but which may be quickly removed in the event of a flood by a tripping device, or by deliberately designed failure of the flashboard or its supports.
Floc	A cluster of frazil particles.
Floe	An accumulation of frazil flocs (also known as a "pan") or a single piece of broken ice.
Flood	<p>The inundation of a normally dry area caused by high flow, or overflow of water in an established watercourse, such as a river, stream, or drainage ditch; or ponding of water at or near the point where the rain fell that causes or threatens damage. This is a duration type event with a slower onset than flash flooding, normally greater than 6 hours.</p> <p>Any relatively high streamflow overtopping the natural or artificial banks in any reach of a stream.</p> <p>A relatively high flow as measured by either gage height or discharge quantity.</p> <p>See Annual flood.</p>
Flood Control Storage	Storage of water in reservoirs to abate flood damage.
Flood Crest	The maximum height of a flood wave as it passes a location. See Flood peak.
Flood Event	See Flood wave.
Flood Frequency Curve	<p>1) A graph showing the number of times per year on the average, plotted as abscissa, that floods of magnitude, indicated by the ordinate, are equaled or exceeded.</p> <p>2) A similar graph but with recurrence intervals of floods plotted as abscissa.</p>

Flood of Record	The highest observed river stage or discharge at a given location during the period of record keeping. (Not necessarily the highest known stage.)
Flood Peak	The highest value of the stage or discharge attained by a flood; thus, peak stage or peak discharge. Flood crest has nearly the same meaning, but since it connotes the top of the flood wave, it is properly used only in referring to stage--thus, crest stage, but not crest discharge.
Flood Plain	<p>1) The portion of a river valley that has been inundated by the river during historic floods. A strip of relatively smooth land bordering a stream, built of sediment carried by the stream and dropped in the slack water beyond the influence of the swiftest current. It is called a living flood plain if it is overflowed in times of highwater; but a fossil flood plain if it is beyond the reach of the highest flood.</p> <p>2) The lowland that borders a river, usually dry but subject to flooding.</p> <p>3) That land outside of a stream channel described by the perimeter of the maximum probable flood.</p>
Flood Plane	The position occupied by the water surface of a stream during a particular flood. Also, loosely, the elevation of the water surface at various points along the stream during a particular flood.
Flood Potential Outlook	FPO. ESF on AWIPS. An NWS outlook that is issued to alert the public of potentially heavy rainfall that could send area rivers and streams into flood or aggravate an existing flood.
Flood Prevention	Measures that are taken in order to keep flood problems from getting worse. Planning, land acquisition, river channel maintenance, wetlands protection, and other regulations all help modify development on flood plains and watersheds to reduce their susceptibility to flood damage. Preventive measures are usually administered by the building, zoning, planning and/ or code enforcement offices of the local government.
Flood Problems	<p>Problems and damages that occur during a flood as a result of human development and actions. Flood problems are a result from</p> <ul style="list-style-type: none"> • Inappropriate development in the floodplain (e.g., building too low, too close to the channel, or blocking flood flows) • Development in the watershed that increases flood flows and creates a larger floodplain, or • A combination of the previous two.

Flood Profile	A graph of elevation of the water surface of a river in flood, plotted as ordinate, against distance, measured in the downstream direction, plotted as abscissa. A flood profile may be drawn to show elevation at a given time, crests during a particular flood, or to show stages of concordant flows.
Flood Routing	Process of determining progressively the timing, shape, and amplitude of a flood wave as it moves downstream to successive points along the river.
Flood Stage	<p>1) Gage height at which a watercourse overtops its banks and begins to cause damage to any portion of the defined reach. Flood stage is usually higher than or equal to bankfull stage.</p> <p>2) Gage height of lowest bank of reach in which gage is situated. The term "lowest bank" is, however, not to be taken to mean an unusually low place or break in the natural bank through which the water inundates an unimportant and small area.</p> <p>3) The stage at which overflow of the natural banks of a stream begins to cause damage in the reach in which the elevation is measured.</p> <p>See also Bankfull stage, Minor, Moderate and Major Flood Stage.</p>
Flood Statement (FLS)	A statement issued by the NWS to inform the public of flooding along major streams in which there is not a serious threat to life or property. It may also follow a flood warning to give later information.
Flood Warning (FLW)	A release by the NWS to inform the public of flooding along larger streams in which there is a serious threat to life or property. A flood warning will usually contain river stage (level) forecasts.
Flood Wave	A rise in streamflow to a crest and its subsequent recession caused by precipitation, snow melt, dam failure, or reservoir releases.
Flood Zone	The land bordering a stream which is subject to floods of about equal frequency; for example, a strip of the flood plain subject to flooding more often than once but not as frequently as twice in a century.
Flood, Maximum Probable	The largest flood for which there is any reasonable expectancy in this climatic era.
Flood-control Storage	Storage of water in reservoirs to abate flood damage. (See Retarding reservoir.)

Flooded Ice	Ice which has been flooded by melt water or river water and is heavily loaded by water and wet snow.
Flood-frequency Curve	<p>1) A graph showing the number of times per year on the average, plotted as abscissa, that floods of magnitude, indicated by the ordinate, are equaled or exceeded.</p> <p>2) A similar graph but with recurrence intervals of floods plotted as abscissa.</p>
Floodwall	A long, narrow concrete, or masonry embankment usually built to protect land from flooding. If built of earth the structure is usually referred to as a levee. Floodwalls and levees confine streamflow within a specified area to prevent flooding. Ring levees confine streamflow out of an area. The term "dike" is used to describe an embankment that blocks an area on a reservoir or lake rim that is lower than the top of the dam.
Floodway	<p>1) A part of the flood plain, otherwise leveed, reserved for emergency diversion of water during floods. A part of the flood plain which, to facilitate the passage of floodwater, is kept clear of encumbrances.</p> <p>2) The channel of a river or stream and those parts of the flood plains adjoining the channel, which are reasonably required to carry and discharge the floodwater or floodflow of any river or stream.</p>
Forebay	The water behind (upstream) of the dam.
Forecast Crest	The highest elevation of river level, or stage, expected during a specified storm event.
Forecast Point	A location that represents an area (reach of a river), where a forecast is made available to the public. Each NWS river forecast point has an associated E-19a, Abridged Report on River Gage Station, and E-19, Report on River Gage Station.
Fracture	Any break or rupture formed in an ice cover or floe due to deformation.
Fracture Zone	An area which has a great number of fractures.
Fracturing	Deformation process whereby ice is permanently deformed, and fracture occurs.

Frazil (Frazil Ice)	A French-Canadian term for fine spicular ice, derived from the French for cinders which this variety of ice most resembles. When formed in salt water, it is known as lolly ice. It is composed of fine spicules, plates, or discoids which, when first formed, are colloidal and not seen in the water in which they are floating. In rivers and lakes, frazil is formed in supercooled, turbulent water.
Frazil Slush	An agglomerate of loosely packed frazil which floats or accumulates under the ice cover.
Freeboard	The vertical distance between the normal maximum level of the water surface in a channel, reservoir, tank, canal, etc., and the top of the sides of a levee, dam, etc., which is provided so that waves and other movements of the liquid will not overtop the confining structure.
Freezeup Date	Date on which the water body was first observed to be completely frozen over.
Freezup Jam	Ice jam formed as frazil ice accumulates and thickens.

G

Gage	<p>1) A device for indicating the magnitude or position of a thing in specific units, when such magnitude or position undergoes change, for example The elevation of a water surface, the velocity of flowing water, the pressure of water, the amount or intensity of precipitation, the depth of snowfall, etc.</p> <p>2) The act or operation of registering or measuring the magnitude or position of a thing when these characteristics are undergoing change. (3) The operation, including both field and office work, of measuring the discharge of a stream of water in a waterway.</p>
Gage Datum	The arbitrary zero datum elevation which all stage measurements are made from.
Gage Height	The water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term stage, although gage height is more appropriate when used with a reading on a gage.
Gage Zero	The elevation of zero stage. (Same as gage datum.)

Gaging Station	A particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. (See also Stream-gaging station.)
Gate	A device in which a leaf or member is moved across the waterway from an external position to control or stop flow. There are many different kinds of gates used on a dam. Some include Bulkhead, Crest (or Spillway), Emergency, Fixed Wheel, Flap, Flood, Guard, Outlet, Radial, Regulating, and Slide Gates.
Geohydrology	That branch of hydrology relating to subsurface, or subterranean waters.
Glacier	Bodies of land ice that consist of recrystallized snow accumulated on the surface of the ground, and that move slowly downslope.
Glacier Dammed Lake	The lake formed when a glacier flows across the mouth of an adjoining valley and forms an ice dam.
GOES	Geostationary Orbiting Environmental Satellite. Satellite orbiting at 22,000 miles above the earth's surface that remains above the same location on the earth. DCPs transmit river and rainfall data to the GOES for relay to a ground-receive site in Wallops Island, VA.
GOES DCS	Data Collection System. A data collection system under NESDIS which is comprised of the DCPs, and the NESDIS Command and Data Acquisition (CDA) System components. This satellite-based system collects a variety of environmental data from locations in the Western Hemisphere. The system is a data relay network for more than 10,000 DCPs which transmits data to one of two GOES satellites (East and West). These data are relayed to the NESDIS CDA ground station located at Wallops Island, VA. The data are then relayed over to Silver Springs, MD, where the data is then distributed to the appropriate recipients.
Ground Water	Water within the earth that supplies wells and springs; water in the zone of saturation where all openings in rocks and soil are filled, the upper surface of which forms the water table. Also termed Phreatic water.
Grounded Ice	Ice that has run aground or is contact with the ground underneath it.

H

HADS	Hydrometeorological Automated Data System. Software that replaced GDDS to process and distribute the GOES DCP data and CADAS data collected from DCP's and LARCS.
Hanging (Ice) Dam	A mass of ice composed mainly of frazil or broken ice deposited underneath an ice cover in a region of low flow velocity.
Head	The difference between the pool height and tailwater height. Usually expressed in feet of head, or in lbs./sq. inch.
Head Loss	The decrease in total head caused by friction, entrance and exit losses.
Head Race	A channel which directs water to a water wheel; a forebay.
Headwater Basin	A basin at the headwaters of a river. All discharge of the river at this point is developed within the basin.
Headwaters	Streams at the source of a river.
Hinge Crack	Crack caused by significant changes in water level.
HSA (Hydrologic Service Area)	A geographical area assigned to Weather Service Forecast Office's/Weather Forecast Office's that embraces one or more rivers.
Hummock	A hillock of broken ice which has been forced upward by pressure.
Hummocked Ice	Ice piled haphazardly one piece over another to form an uneven surface.
Hydrograph	A graph showing the water level (stage), discharge, or other property of a river volume with respect to time.
Hydrograph Separation	The process where the storm hydrograph is separated into baseflow components and surface runoff components.
Hydrologic Budget	An accounting of the inflow to, outflow from, and storage in, a hydrologic unit, such as a drainage basin, aquifer, soil zone, lake, reservoir, or irrigation project.
Hydrologic Cycle	The natural pathway water follows as it changes between liquid, solid, and gaseous states.

Hydrologic Equation	The water inventory equation (Inflow = Outflow + Change in Storage) which expresses the basic principle that during a given time interval the total inflow to an area must equal the total outflow plus the net change in storage. The equation balancing the hydrologic budget.
Hydrologic Model	A conceptual or physically-based procedure for numerically simulating a process or processes which occur in a watershed.
Hydrologic Service Area (HSA)	A geographical area assigned to Weather Service Forecast Office's/Weather Forecast Office's that embraces one or more rivers.
Hydrologic Services	A general term referring to the operations, products, verbal communications, and related forms of support provided by the NWS for the Nation's streams, reservoirs, and other areas affected by surface water.
Hydrologic Unit	A geographical area representing part or all of a surface drainage basin or distinct hydrologic feature such as a reservoir, lake, etc.
Hydrologists	Individuals who study the applied science of hydrology and solve hydrologic problems.
Hydrology	<p>1) The applied science concerned with the waters of the earth, their occurrences, distribution, and circulation through the unending hydrologic cycle of precipitation, consequent runoff, infiltration, and storage; eventual evaporation; and so forth. It is concerned with the physical and chemical reaction of water with the rest of the earth, and its relation to the life of the earth.</p> <p>2) The science encompassing the behavior of water as it occurs in the atmosphere, on the surface of the ground, and underground.</p> <p>3) The science that relates to the water of the earth.</p> <p>4) The science treating of the waters of the earth, their occurrence, distribution, and movements.</p> <p>In practice the study of the water of the oceans and the atmosphere is considered part of the sciences of oceanography and meteorology.</p>

I

Ice Boom	A floating structure designed to retain ice.
Ice Bridge	A continuous ice cover of limited size extending from shore to shore like a bridge.

Ice Gorge	The gorge or opening left in a jam after it has broken.
Ice Jam	A stationary accumulation that restricts or blocks streamflow.
Ice Push	Compression of an ice cover particularly at the front of a moving section of ice cover.
Ice Run	Flow of ice in a river. An ice run may be light or heavy, and may consist of frazil, anchor, slush, or sheet ice.
Ice Shove	On-shore ice push caused by wind, and currents, changes in temperature, etcetera.
Ice Twitch	Downstream movement of a small section of an ice cover. Ice twitches occur suddenly and often appear successively.
Impermeable	Material that does not permit fluids to pass through it.
Impervious	The ability to repel water, or not let water infiltrate.
Inactive Storage Capacity	The portion of capacity below which the reservoir is not normally drawn, and which is provided for sedimentation, recreation, fish and wildlife, aesthetic reasons, or for the creation of a minimum controlled operational or power head in compliance with operating agreements or restrictions.
Inch-Degrees	The product of inches of rainfall multiplied by the temperature in degrees above freezing (Fahrenheit Scale), used as a measure of the snowmelting capacity of rainfall.
Inches of Runoff	The volume of water from runoff of a given depth over the entire drainage.
Indirect Flood Damage	Expenditures made as a result of the flood (other than repair) such as relief and rescue work, removing silt and debris, etc.
Infiltration	Movement of water through the soil surface into the soil.
Infiltration Capacity	The maximum rate at which water can enter the soil at a particular point under a given set of conditions.
Infiltration Capacity Curve	A graph showing the time-variation of infiltration capacity. A standard infiltration capacity curve shows the time-variation of the infiltration rate which would occur if the supply were continually in excess of infiltration capacity.

Infiltration Index	An average rate of infiltration, in inches per hour, equal to the average rate of rainfall such as that the volume of rainfall at greater rates equals the total direct runoff.
Infiltration Rate	1) The rate at which infiltration takes place expressed in depth of water per unit time, usually in inches per hour. 2) The rate, usually expressed in cubic feet per second, or million gallons per day per mile of waterway, at which ground water enters an infiltration ditch or gallery, drain, sewer, or other underground conduit.
Influent Stream	Any watercourse in which all, or a portion of the surface water flows back into the ground namely the, vadose zone, or zone of aeration.
Initial Detention	The volume of water on the ground, either in depressions or in transit, at the time active runoff begins.
Initial Loss	In hydrology, rainfall preceding the beginning of surface runoff. It includes interception, surface wetting, evaporation and infiltration unless otherwise specified.
Initial Moisture Deficiency	The quantity, usually expressed in depth of water in inches upon a unit area, by which the actual water content of a given soil zone (usually the root zone) in such area is less than the field capacity of such zone at the beginning of the rainy season. Also called Initial Water Deficiency.
Initial Water Deficiency	See Initial Moisture Deficiency.
Inland Freshwater Wetlands	Swamps, marshes, and bogs found inland beyond the coastal saltwater wetlands.
Instantaneous Unit Hydrograph	The theoretical, ideal, unit hydrograph that has a infinitesimal duration.
Instream Use	The use of water that does not require withdrawal or diversion from its natural watercourse; for example, the use of water for navigation, recreation, and support of fish and wildlife.
Intangible Flood Damage	Estimates of the damage done by disruption of business, danger to health, shock, and loss of life and in general all costs not directly measurable which require a large element of judgment for estimating.
Integrated Flood Observing and Warning System	IFLOWS. A 1200 baud wide area network utilizing UHF/VHF radio and land line communications;

IFLOWS components include rainfall and stage sensors, transceivers, store-forward repeaters and computer base stations.

Interbasin Transfer

The physical transfer of water from one watershed to another.

Intercepting Drain

A drain constructed at the upper end of the area to be drained, to intercept surface or ground water flowing toward the protected area from higher ground, and carry it away from the area. Also called Curtain Drain.

Interception

The process by which precipitation is caught and held by foliage, twigs, and branches of trees, shrubs, and other vegetation, and lost by evaporation, never reaching the surface of the ground. Interception equals the precipitation on the vegetation minus streamflow and throughfall.

Intermittent Stream

A stream that flows periodically. Compare perennial stream.

Inundation Map

A map delineating the area that would be inundated in the event of a dam failure.

Irrigated Area

The gross farm area upon which water is artificially applied for the production of crops, with no reduction for access roads, canals, or farm buildings.

J

K

KCFS (Thousands of Cubic Feet per Second) The flow rate or discharge equal to one cubic foot (of water, usually) per second x 1000. This rate is equivalent to approximately 7480 gallons per second.

L

Lag

Variously defined as time from beginning (or center of mass) of rainfall to peak (or center of mass) of runoff.

Lag (of a Basin)	The measure of the time between the center of mass of precipitation to the center of mass of runoff (on the hydrograph); basin lag is a function of not only basin characteristics, but also of storm intensity and movement. Some hydrologic texts define lag from the center of mass of rainfall to the hydrograph peak.
Lag (Time)	The time it takes a flood wave to move downstream.
LARC	Limited Automatic Report Collector. An electronic device that interfaces a river or precipitation gage with a telephone line making it possible for remote computers to call a gaging site and retrieve data. Eventually LARCs will Replace DARDs.
Length	The distance in the direction of flow between two specific points along a river, stream, or channel.
Levee (Dike)	A long, narrow embankment usually built to protect land from flooding. If built of concrete or masonry the structure is usually referred to as a flood wall. Levees and floodwalls confine streamflow within a specified area to prevent flooding. The term "dike" is used to describe an embankment that blocks an area on a reservoir or lake rim that is lower than the top of the dam.
Lining	A coating of concrete, rubber, or plastic to a canal, tunnel, shaft or reservoir to provide water-tightness, prevent erosion, reduce friction, or support the periphery of the structure.
Local Flooding	Flooding conditions over a relatively limited (localized) area.
Lowland Flooding	Inundation of low areas near the river, often rural, but may also occur in urban areas.
 M	
Main Stem	The reach of a river/stream formed by the tributaries that flow into it.
Major Flood Stage	Extensive inundation of structures and roads with property damage. Significant evacuations of people and livestock and/or transfer of property to higher elevations.
MAP (Mean Areal Precipitation)	The average rainfall over a given area, generally expressed as an average depth over the area.
Maximum Probable Flood	See Flood, maximum probable.

Maximum Spillway Discharge	Spillway discharge (cfs) when reservoir is at maximum designed water surface elevation.
Meander	The winding of a stream channel.
Miners' Inch	A rate of discharge through an orifice one inch square under a specific head.
Minor Flood Stage	A general term indicating minimal or no property damage but possibly some public inconvenience.
Mission of the Hydrologic Services Program	To provide river and flood forecasts and warnings for the protection of life and property and to provide basic hydrologic forecast information for the Nation's economic and environmental well being.
Mission of the National Weather Service	To provide weather and flood warnings, public forecasts and advisories for all of the United States, its territories, adjacent waters and ocean areas, primarily for the protection of life and property. NWS data and products are provided to private meteorologist for the provision of all specialized services.
Moderate Flood Stage	Some inundation of structures and roads near the stream/river. Some evacuations of people and/or transfer of property to higher elevations is necessary.

N

National Environmental Satellite, Data, and Information Service (NESDIS)	NESDIS collects, processes, stores, analyzes, and disseminates various types of hydrologic, meteorologic, and oceanic data. NESDIS is also responsible for the development of analytical and descriptive products so as to meet the needs of it's users.
Natural Control	A stream gaging control which is natural to the stream channel, in contrast to an artificial control structure by man.
NOHRSC	The National Operational Hydrologic Remote Sensing Center. An organization under the National Weather Service Office of Hydrology (OH) that mainly deals with snow mapping.
Normal	A central value (such as arithmetic average or median) of annual quantities for a 30-year period ending with an even 10-year, thus 1921-50; 1931-60, and so forth. This definition accords with that recommended by the Subcommittee on Hydrology of the Federal Inter-Agency Committee on Water Resources.

Normal Water Surface Elevation	Normal Pool Level. The lowest crest level of overflow on a reservoir with a fixed overflow level (spillway crest elevation). For a reservoir whose outflow is controlled wholly or partly by movable gates, siphons, or other means, it is the maximum level to which water may rise under normal operating conditions, exclusive of any provision for flood surcharge.
Normal Year	A year during which the precipitation or stream flow approximates the average for a long period of record.
NRCS	National Resources Conservation Services
NWSH	National Weather Service Headquarters



One Hundred Year Flood.	Flood magnitude that has one chance in 100 of being exceeded in any future 1-year period. The occurrence of floods is assumed to be random in time, or regularity of occurrence is implied. The exceeding of a 1-percent chance is no guarantee, therefore, that a similar size flood will not occur next week. The risk of experiencing a large flood within time periods longer than 1 year increases in a nonadditive fashion. For example, the risk of exceeding a 1-percent chance flood one or more times during a 30-year period is 25 percent and during a 70-year period is 50 percent.
One Percent Chance Flood	See One Hundred Year Flood.
Orifice	<ol style="list-style-type: none"> 1) An opening with closed perimeter, usually sharp edged, and of regular form in a plate, wall, or partition through which water may flow, generally used for the purpose of measurement or control of water. 2) The end of a small tube, such as a Pitot tube, piezometer, etc.
Orographic Precipitation	Precipitation which is caused by hills or mountain ranges deflecting the moisture-laden air masses upward, causing them to cool and precipitate their moisture.
Outlet	An opening through which water can be freely discharged from a reservoir.
Overland Flow	The flow of rainwater or snowmelt over the land surface toward stream channels. After it enters a watercourse it becomes runoff.

P

Palmer Drought Severity Index	An index whereby excesses or deficiencies of precipitation are determined in relation to average climate values. The index takes in to account precipitation, potential and actual Evapotranspiration, infiltration of water into the soil, and runoff.
Pancake Ice	Circular flat pieces of ice with a raised rim; the shape and rim are due to repeated collisions.
Parapet Wall	A solid wall built along the top of the dam for ornament, safety, or to prevent overtopping.
Peak Discharge	Highest rate of discharge of a volume of water passing a given location during a given period of time (during the year, or a flood event, etc..).
Percolation	The movement, under hydrostatic pressure, of water through the interstices of a rock or soil, except the movement through large openings such as caves.
Perennial Stream	A stream that flows all year round. Compare intermittent stream.
Permanent Control	A stream gaging control which is substantially unchanging and is not appreciably affected by scour, fill, or backwater.
Pluvial	In hydrology, anything that is brought about directly by precipitation.
Point Discharge	Instantaneous rate of discharge, in contrast to the mean rate for an interval of time.
Point Precipitation	Precipitation at a particular site, in contrast to the mean precipitation over an area.
Ponding	In flat areas, runoff collects, or ponds in depression and cannot drain out. Flood waters must infiltrate slowly into the soil, evaporate, or be pumped out.
Pool	A deep reach of a stream. The reach of a stream between two riffles. Natural streams often consist of a succession of pools and riffles.

Pool Height	The height of the water behind a dam. (Various datums may be used and various pool heights may be used, e.g., conservation pool, flood control pool, etc.)
Precipitation	As used in hydrology, precipitation is the discharge of water, in a liquid or solid state, out of the atmosphere, generally onto a land or water surface. It is the common process by which atmospheric water becomes surface, or subsurface water. The term "precipitation" is also commonly used to designate the quantity of water that is precipitated. Precipitation includes rainfall, snow, hail, and sleet, and is therefore a more general term than rainfall.
Pressure Gage	A device for registering the pressure of solids, liquids, or gases. It may be graduated to register pressure in any units desired.
Primary (or Principal) Spillway	The spillway which would be used first during normal inflow and flood flows.
Probabilistic Quantitative Precipitation Forecast (PQPF)	A form of QPF (see below) that includes an assigned probability of occurrence for each numerical value in the forecast product.
Property Protection	Measures that are undertaken usually by property owners in order to prevent, or reduce flood damage. Property protection measures are often inexpensive for the community because they are implemented by or cost-shared with property owners. In many cases the buildings' appearance or use is unaffected, so these measurements are particularly appropriate for historical sites and landmarks. These measures include relocation and acquisition, flood proofing, and buying flood insurance.
Puddle	<ol style="list-style-type: none"> 1) The act of compacting earth, soil clay, etc., by mixing them with water and rolling or tamping the mixture. 2) A compact mass of earth, soil, clay, or a mixture of material, which has been compacted through the addition of water, rolling and tamping. This makes the material less permeable. 3) A small pool of water, usually a few inches in depth and from several inches to several feet in its greatest dimension.



QPF

Quantitative Precipitation Forecast. A spatial and temporal precipitation forecast that will predict the potential amount of future precipitation for a specified region, or area.

R

Radioisotope Snow Gage	A snow water equivalent gage based on the absorption of gamma radiation by snow; this gage can measure up to 55 inches water equivalent with a 2 to 5 percent error.
Rain	Liquid precipitation.
Rainfall	The quantity of water that falls as rain only. Not synonymous with precipitation.
Rainfall Excess	The volume of rainfall available for direct runoff. It is equal to the total rainfall minus interception, depression storage, and absorption.
Rainfall, Excessive	Rainfall in which the rate of fall is greater than certain adopted limits, chosen with regard to the normal precipitation (excluding snow) of a given place or area. In the NWS, it is defined, for States along the southern Atlantic coast and the Gulf coast, as rainfall in which the depth of precipitation is 0.90 inch at the end of 30 minutes and 1.50 inches at the end of an hour, and for the rest of the country as rainfall in which the depth of precipitation at the end of each of the same periods is 0.50 and 0.80 inch, respectively.
Rating Curve	A graph showing the relationship between the stage, usually plotted vertically (Y-axis) and the discharge, usually plotted horizontally (X-axis).
Rating Table	A table of stage values and the corresponding discharge for a river gaging site.
Reach	<ol style="list-style-type: none">1) The length of channel uniform with respect to discharge, depth, area, and slope.2). The length of a channel for which a single gage affords a satisfactory measure of the stage and discharge.3) The length of a river between two gaging stations.4) The distance between two specific points outlining that portion of the stream, or river for which the forecast applies. This generally applies to the distance above and below the forecast point for which the forecast is valid.5) More generally, any length of a river.

Recurrence Interval	The average amount of time between events of a given magnitude. For example, there is a 1% chance that a 100-year flood will occur in any given year.
Regulation	The artificial manipulation of the flow of a stream.
Reservoir	A man-made facility for the storage, regulation and controlled release of water.
Reservoir Surface Area	The surface area of a reservoir when filled to the normal pool or water level.
Reservoir Volume	The volume of a reservoir when filled to normal pool or water level.
Response Time	The amount of time in which it will take a watershed to react to a given rainfall event.
RFC	River Forecast Center. Centers that serve groups of Weather Forecast Offices, in providing hydrologic guidance and is the first echelon office for the preparation of river and flood forecasts and warnings.
Ridge	A line or wall of broken ice forced up by pressure. May be fresh or weathered.
Ridge Ice	Ice piled haphazardly one piece over another in the form of ridges or walls.
Riffle	A rapid in a stream.
Riparian	Pertaining to the banks of a stream.
Riparian Zone	A stream and all the vegetation on its banks.
River Basin	Drainage area of a river and its tributaries.
River Flooding	The rise of a river to an elevation such that the river overflows its natural banks causing or threatening damage.
River Forecast (RVF)	An internal product issued by RFCs to other NWS offices. An RVF contains stage and/or flow forecasts for specific locations based on existing, and forecasted hydrometeorologic conditions. The contents of these products are used by the HSA office to prepare Flood Warnings (FLW), Flood Statements (FLS), River Statements (RVS), as well as other products available to the public.

River Gage	A device for measuring the river stage.
River Gage Datum	The arbitrary zero datum elevation which all stage measurements are made from.
River Ice Statement (RVI)	A public product issued by the RFC's containing narrative and numeric information on river ice conditions.
River Observing Station	An established location along a river designated for observing and measuring properties of the river.
River Recreation Statement (RVR)	A statement released by the NWS to inform river users of current and forecast river and lake conditions. These statements are especially useful for planning purposes.
River Statement (RVS)	A product issued to communicate notable hydrologic conditions which do not involve flooding, i.e., within river bank rises, minor ice jams, etc.
River Summary (RVA)	A NWS summary of river and/ or crest stages for selected forecast points along the river.
River System	All of the streams and channels draining a river basin.
Rotten Ice	Ice in an advanced stage of disintegration.
Routing	The methods of predicting the attenuation of a flood wave as it moves down the course of a river.
Runoff	<p>That part of the precipitation that appears in surface streams. Runoff is composed of baseflow and surface runoff. It is the same as streamflow unaffected by artificial diversions, storage, or other works of man in or on the stream channels. Runoff may be classified as follows:</p> <p>Classification as to speed of appearance after rainfall or snow melting:</p> <ul style="list-style-type: none"> ▪ Direct runoff ▪ Base runoff <p>Classification as to source:</p> <ul style="list-style-type: none"> ▪ Surface runoff (see Overland flow) ▪ Storm seepage ▪ Ground-water runoff (see Stream, gaining)

S

Satellite Hydrology Program	A NOHRSC program that uses satellite data to generate areal extent of snow cover data over large areas of the western United States.
SCS	The Soil Conservation Service, now known as the NRCS (National Resources Conservation Services).
Second-Day Feet	The volume of water represented by a flow of one cubic foot per second for 24 hours; equal to 84,000 cubic feet. This is used extensively as a unit of runoff volume. Often abbreviated as SDF.
Second-foot	Same as cfs. This term is no longer used in published reports of the U.S. Geological Survey.
Sediment	Fragmental material that originates from weathering of rocks and is transported by, suspended in, or deposited by water or air or is accumulated in beds by other natural agencies.
Sediment Discharge	The rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight, or by volume, that is discharged in a given time.
Sediment Storage Capacity	The volume of a reservoir planned for the deposition of sediment.
Seepage	The interstitial movement of water that may take place through a dam, its foundation, or abutments.
Shaft or Morning Glory Spillway	A vertical or inclined shaft into which flood water spills and then is conducted through, under, or around a dam by means of a conduit or tunnel. If the upper part of the shaft is splayed out and terminates in a circular horizontal weir, it is termed a "bellmouth" or "morning glory" spillway.
Sheet Flow	Flow that occurs overland in places where there are no defined channels, the flood water spreads out over a large area at a uniform depth. This also referred to as overland flow.
Shore Ice	An ice sheet in the form of a long border attached to the bank or shore; border ice.
Side Channel Spillway	A spillway whose crest is roughly parallel to the channel immediately downstream of the spillway.

Siphon Spillway	A spillway with one or more siphons built at crest level. This type of spillway is sometimes used for providing automatic surface-level regulation within narrow limits or when considerable discharge capacity is necessary within a short period of time.
Small Stream Flooding	Flooding of small creeks, streams, or runs.
Snow	A form of precipitation composed of ice crystals.
Snow Core	A sample of either freshly fallen snow, or the combined old and new snow on the ground. This is obtained by pushing a cylinder down through the snow layer and extracting it.
Snow Course	A line or series of connecting lines along which snow samples are taken at regularly spaced points.
Snow Density	Ratio between the volume of melt water derived from a sample of snow and the initial volume of the sample. This is numerically equal to the specific gravity of the snow.
Snow Depth	The combined total depth of both the old and new snow on the ground.
Snow Pillow	An instrument used to measure snow water equivalents. Snow pillows typically have flat stainless steel surface areas. The pillow below this flat surface is filled with antifreeze solution and the pressure in the pillow is related to the water-equivalent depth of the snow on the platform. One great advantage of snow pillows over a snow survey is the frequency of observations.
Snow Stake	A 1-3/4 inch square, semi-permanent stake, marked in inch increments to measure snow depth.
Snow Stick	A portable rod used to measure snow depth.
SNOW TELemetry (SNOTEL)	An automated network of snowpack data collection sites. The Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), has operated the Federal-State-Private Cooperative Snow Survey Program in the western United States since 1935. A standard SNOTEL site consists of a snow pillow, a storage type precipitation gage, air temperature sensor and a small shelter for housing electronics.
Snow Water Equivalent	The water content obtained from melting accumulated snow.

Snow, Quality of	The ratio of heat of melting of snow, in calories per gram to the 80 calories per gram for melting pure ice at 0 degrees C. Percentage by weight which is ice
Snowboard	A flat, solid, white material, such as painted plywood, approximately two feet square, which is laid on the ground, or snow surface by weather observers to obtain more accurate measurements of snowfall and water content.
Snowline	The general altitude to which the continuous snow cover of high mountains retreats in summer, chiefly controlled by the depth of the winter snowfall and by the temperature of the summer.
Snowline, Temporary	A line sometimes drawn on a weather map during the winter showing the southern limit of the snow cover.
Snowmelt Flooding	Flooding caused primarily by the melting of snow.
Snowpack	The total snow and ice on the ground, including the new snow, the previous snow and ice which has not melted.
Soil Conservation Service	The former name of a branch of the United States Department of Agriculture, renamed the Natural Resources Conservation Service (NRCS). NRCS has responsibilities in soil and water conservation, and flood prevention.
Spillway	A structure over or through which excess or flood flows are discharged. If the flow is controlled by gates, it is a controlled spillway, if the elevation of the spillway crest is the only control, it is an uncontrolled spillway. Some various types of spillways include <ul style="list-style-type: none"> ▪ Auxiliary or Emergency Spillway - A secondary spillway designed to operate only during exceptionally large flood flows. Allows inflows from large storms to be released from the reservoir before the water level raises high enough to overtop the dam. ▪ Fuse Plug Spillway - An auxiliary or emergency spillway comprising a low embankment or a natural saddle designed to be overtopped and eroded away during flood flows.
Spillway Crest	The elevation of the highest point of a spillway.
Staff Gage	A vertical staff graduated in appropriate units which is placed so that a portion of the gage is in the water at all times. Observers read the river stage off the staff gage.

Stage	The height of a water surface above an established datum plane; also gage height.
Stage-Capacity Curve	A graph showing the relation between the surface elevation of the water in a reservoir, usually plotted as ordinate, against the volume below that elevation, plotted as abscissa.
Stage-Discharge Curve	(rating curve). A graph showing the relation between the gage height, usually plotted as ordinate, and the amount of water flowing in a channel, expressed as volume per unit of time, plotted as abscissa.
Stage-Discharge Relation	The relation expressed by the stage-discharge curve.
Storage	<p>1) Water artificially impounded in surface or underground reservoirs, for future use. The term regulation refers to the action of this storage in modifying streamflow. See also Conservation storage, Total storage, Dead storage, and Usable storage.</p> <p>2) Water naturally detained in a drainage basin, such as ground water, channel storage, and depression storage. The term "drainage basin storage" or simply "basin storage" is sometimes used to refer collectively to the amount of water in natural storage in a drainage basin.</p>
Storm	A disturbance of the ordinary average conditions of the atmosphere which, unless specifically qualified, may include any or all meteorological disturbances, such as wind, rain, snow, hail, or thunder.
Storm Hydrograph	A hydrograph representing the total flow or discharge past a point.
Stormwater Discharge	Precipitation that does not infiltrate into the ground or evaporate due to impervious land surfaces but instead flows onto adjacent land or water areas and is routed into drain/sewer systems.

Stream

A general term for a body of flowing water. In hydrology the term is generally applied to the water flowing in a natural channel as distinct from a canal. More generally as in the term stream gaging, it is applied to the water flowing in any channel, natural or artificial. Streams in natural channels may be classified as follows:

Relation to time.

- Perennial. One which flows continuously.
- Intermittent or seasonal. One which flows only at certain times of the year when it receives water from springs or from some surface source such as melting snow in mountainous areas.
- Ephemeral. One that flows only in direct response to precipitation, and whose channel is at all times above the water table.

Relation to space.

- Continuous. One that does not have interruptions in space.
- Interrupted. One which contains alternating reaches, that are either perennial, intermittent, or ephemeral.

Relation to ground water.

- Gaining. A stream or reach of a stream that receives water from the zone of saturation.
- Losing. A stream or reach of a stream that contributes water to the zone of saturation.
- Insulated. A stream or reach of a stream that neither contributes water to the zone of saturation nor receives water from it. It is separated from the zones of saturation by an impermeable bed.
- Perched. A perched stream is either a losing stream or an insulated stream that is separated from the underlying ground water by a zone of aeration.

Stream Gage

A site along a stream where the stage (water level) is read either by eye or measured with recording equipment.

Stream Gaging

The process and art of measuring the depths, areas, velocities, and rates of flow in natural or artificial channels.

Stream Order	<p>A method of numbering streams as part of a drainage basin network. The smallest unbranched mapped tributary is called first order, the stream receiving the tributary is called second order, and so on. It is usually necessary to specify the scale of the map used. A first-order stream on a 1:62,500 map, may be a third-order stream on a 1:12,000 map.</p> <p>Tributaries which have no branches are designated as of the first order, streams which receive only first-order tributaries are of the second order, larger branches which receive only first-order and second-order tributaries are designated third order, and so on, the main stream being always of the highest order.</p>
Stream Segment	<p>Refers to the surface waters of an approved planning area exhibiting common hydrological, natural, physical, biological, or chemical processes. Segments will normally exhibit common reactions to external stresses such as discharge or pollutants.</p>
Streamflow	<p>The discharge that occurs in a natural channel. Although the term discharge can be applied to the flow of a canal, the word streamflow uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than runoff, as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.</p>
Stream-gaging Station	<p>A gaging station where a record of discharge of a stream is obtained. Within the Geological Survey this term is used only for those gaging stations where a continuous record of discharge is obtained.</p>
Subsidence	<p>Sinking down of part of the earth's crust due to underground excavation, such as the removal of groundwater.</p>
Surcharge Capacity	<p>The volume of a reservoir between the maximum water surface elevation for which the dam is designed and the crest of an uncontrolled spillway, or the normal full-pool elevation of the reservoir with the crest gates in the normal closed position.</p>
Surface Runoff	<p>That part of the runoff which travels over the soil surface to the nearest stream channel. It is also defined as that part of the runoff of a drainage basin that has not passed beneath the surface since precipitation. The term is misused when applied in the sense of direct runoff. See also, Runoff, Overland flow, Direct runoff, Ground-water runoff, and Surface water.</p>
Surface Water	<p>Water that flows in streams and rivers and in natural lakes, in wetlands, and in reservoirs constructed by humans.</p>
SWE	<p>Snow Water Equivalent</p>

T

Tailwater Height	Height of water immediately downstream of the dam. (Various datums may be used.)
Terrace	A berm or discontinuous segments of a berm, in a valley at some height above the flood plain, representing a former abandoned flood plain of the stream.
Threshold Runoff	The runoff in inches from a rain of specified duration that causes a small stream to slightly exceed bankfull. When available, flood stage is used instead of slightly over bankfull.
Toe of Dam	Upstream and Downstream. The junction of the face of a dam with the ground surface.
Total Gross Reservoir Capacity	The total amount of storage capacity available in a reservoir for all purposes from the streambed to the normal water or normal water or normal pool surface level. It does not include surcharge, but does include dead storage.
Total storage	The volume of a reservoir below the maximum controllable level including dead storage.
Trace	A hydrograph or similar plot for an extended-range time horizon showing one of many scenarios generated through an ensemble forecast process.
Trace (of Precipitation)	A rainfall amount less than 0.01 of an inch.
Transpiration	<ol style="list-style-type: none">1) Water discharged into the atmosphere from plant surfaces.2) The quantity of water absorbed and transpired and used directly in the building of plant tissue, in a specified time. It does not include soil evaporation.3) The process by which water vapor escapes from the living plant, principally the leaves, and enters the atmosphere. As considered practically, transpiration also includes guttation.
Travel Time	The time required for a flood wave to travel from one location to a subsequent location downstream.
Trend	A statistical term referring to the direction or rate of increase or decrease in magnitude of the individual members of a time series of data when random fluctuations of individual members are disregarded.

U

Unit Hydrograph (or Unitgraph)	<ol style="list-style-type: none">1) The discharge hydrograph from one inch of surface runoff distributed uniformly over the entire basin for a given time period.2) The hydrograph of direct runoff from a storm uniformly distributed over the drainage basin during a specified unit of time; the hydrograph is reduced in vertical scale to correspond to a volume of runoff of 1 inch from the drainage basin.3) The hydrograph of surface runoff (not including ground-water runoff) on a given basin due to an effective rainfall falling for a unit of time.
Unit Hydrograph Duration	The time over which one inch of surface runoff is distributed for unit hydrograph theory.
Unit Hydrograph Theory	Unit Hydrograph Theory states that surface runoff hydrographs for storm events of the same duration will have the same shape, and the ordinates of the hydrograph will be proportional to the ordinates of the unit hydrograph. For example, the hydrograph for ½" of storm runoff will be half that of that from the unit hydrograph.
Universal Type Weighting and Recording Gage	A gage which collects precipitation and then converts the weight onto an inked pen movement which traces on graph paper fixed to a clock driven drum.
Urban Flash Flood Guidance	A specific type of flash flood guidance which estimates the average amount of rain needed over an urban area during a specified period of time to initiate flooding on small, ungaged streams in the urban area.
Urban Flooding	Flooding of streets, underpasses, low lying areas, or storm drains. This type of flooding is mainly an inconvenience and is generally not life threatening.
US Army Corps of Engineers	USACE. As part of the Department of the Army, the Corps has responsibilities in civil and military areas. In civil works, the USACE has authority for approval of dredge and fill permits in navigable waters and tributaries thereof; the USACE enforces wetlands regulations, and constructs and operates a variety of water resources projects, mostly notably levee, dams and locks.

US Bureau of Reclamation	USBR. The Federal agency whose mandate was to reclaim the arid west of the United States. Operating in 17 western states, this agency builds, operates and maintains a variety of irrigation, power, and flood control projects.
U.S. Forest Service	USFS
US Geological Survey	USGS. The Federal Agency chartered in 1879 by congress to classify public lands, and to examine the geologic structure, mineral resources, and products of the national domain. As part of its mission, the USGS provides information and data on the Nation's rivers and streams that are useful for mitigation of hazards associated with floods and droughts.
Usable Storage	The volume normally available for release from a reservoir below the stage of the maximum controllable level.

V

W

Water Equivalent	The amount of water, in inches, obtained by melting a snow sample.
Water Loss	The difference between the average precipitation over a drainage basin and the water yield from the basin for a given period. The basic concept is that water loss is equal to evapotranspiration, that is, water that returns to the atmosphere and thus is no longer available for use. However, the term is also applied to differences between measured inflow and outflow even where part of the difference may be seepage.
Water Pollution	The alteration of the constituents of a body of water by man to such a degree that the water loses its value as a natural resource.
Water Supply Outlook	A seasonal volume forecast, generally for a period centered around the time of spring snowmelt (e.g., April-July). The outlooks are in units of acre-feet and represent the expected volume of water to pass by a given point during a snowmelt season. The outlook categories include Most Probable, Reasonable Maximum, and Reasonable Minimum.

Water Supply Outlook (ESS) Product	A public product issued by a Forecast Office which contains narrative and numeric information on current and extended water supply conditions.
Water Year	In Geological Survey reports dealing with surface-water supply, the 12-month period, October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ended September 30, 2005, is called the "2005 water year."
Watercourse	Any surface flow such as a river, stream, or tributary.
Watershed	The divide separating one drainage basin from another and in the past has been generally used to convey this meaning. However, over the years, use of the term to signify drainage basin or catchment area has come to predominate, although drainage basin is preferred. Drainage divide, or just divide, is used to denote the boundary between one drainage area and another. Used alone, the term "watershed" is ambiguous and should not be used unless the intended meaning is made clear.
Weighing-type Precipitation Gage	A rain gage that weighs the rain or snow which falls into a bucket set on a platform of a spring or lever balance. The increasing weight of its contents plus the bucket are recorded on a chart. The record thus shows the accumulation of precipitation.
Wetland	An area that is regularly wet or flooded and has a water table that stands at or above the land surface for at least part of the year.
WFO	A National Weather Service Weather Forecast Office.
Wire Weight Gage	A river gage comprised of a weight which is lowered to the water level. The weight is attached to a cable; and as the weight is lowered, a counter indicates the length of cable released. The stage is determined from the length of cable required to reach the water level.

X

Y

Year	See Climatic year; Water year.
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Z

Zero Datum

A reference "zero" elevation for a stream or river gage. This "zero" can be referenced (usually within ten feet of the bottom of the channel) to mean sea level, or to any other recognized datum.