

GLOSSARY

Aggradation – raising of the streambed by deposition that occurs when the energy of the water flowing through a stream reach is insufficient to transport sediment conveyed from upstream.

Alluvium – a general term for sediment deposits resulting directly or indirectly from the transport by streams, including sediments accumulated in riverbeds, floodplains, lakes, fans and estuaries.

Aquifer – an underground zone or layer of sand, gravel, or porous rock that is saturated with water.

Bankfull Flow – streamflow that fills the channel to capacity, flowing with the water surface just at floodplain level but not overtopping the stream banks.

Baseflow – streamflow that originates from groundwater.

Belt Width – the approximate width of the valley. Quantitatively determined by measuring the distance between tangents drawn along the outside of successive meander bends measured perpendicular to the fall of the valley.

Braided – a stream with two or more channels divided by bars or islands.

Channelization – the mechanical alteration of a stream or river involving straightening, deepening, widening, and the clearing of vegetation to improve water conveyance. Often accompanied by streambank stabilization, grade control, and levee construction.

Confinement – the degree to which a stream channel is limited in its lateral movement by valley walls or relic terraces. Quantitatively determined by the meander width ratio.

Crossover – the section of stream in which the thalweg is approximately in the center as it crosses from the outside of the bend in one meander to the outside of the bend in the next meander.

Cross-Section – the configuration of a stream channel as seen from the center of the channel and looking in a downstream direction. Graphic representation of stream channel elevation changes from left to right bank.

Cross-sectional Area (A) - the area (in square feet) of water across a given section of stream channel at a given discharge. A close approximation is $W \times D$.

Deposition – the settling out of fine material from suspension and the cessation of movement for larger particles which occurs when the stream current lacks sufficient energy to maintain transport.

Depth (D) - the vertical distance between the water surface, at a given discharge, and some point on the streambed.

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Direct Runoff – streamflow that originates from overland runoff flow and a substantial portion of subsurface flow.

Discharge – the rate at which a volume of water flows past a given point over some unit of time. Usually measured in cubic feet per second – cfs.

Embeddedness – the degree that larger particles, such as boulders, cobble or gravel are surrounded or covered by fine sediment.

Entrenchment Ratio – the degree of vertical containment of a stream as determined by dividing the floodprone area width by the bankfull width.

Flood Flow – streamflow that exceeds the capacity of the stream channel, overtopping the stream banks and flowing out onto the adjacent land surface.

Flood Frequency – how often a discharge of a given magnitude or volume will be exceeded during a given time period.

Floodplain – the area adjacent to the stream channel that is periodically inundated with water, when the stream overflows its banks.

Floodprone Area – the area including the floodplain and often the low terrace of alluvial streams.

Floodprone Area Width – the width of the floodprone area measured at an elevation equal to twice the bankfull depth.

Fluvial Geomorphology – the study of land forms and land-forming processes associated with flowing water

Gabions – a wire basket filled with rocks used to stabilize streambanks and control erosion on slopes.

Glide – a streambed feature characterized by shallow (maximum depth is 5% or less of the average stream width), slow moving water (velocity less than 0.6 feet/sec), no surface turbulence. Often located at the downstream end or exit of a pool.

Groundwater – subsurface water in a zone of saturation, standing in or passing through the soil and underlying strata that is recharged by infiltration and enters streams through seepage and springs.

Headcut – upstream migration or lowering of the stream channel elevation due to active erosion of the streambed.

Headwaters – the upper reaches of tributaries in a watershed.

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Hydraulic Radius (R) - the ratio of the cross-sectional area to the wetted perimeter; A/P .

Hydrograph – a graph that illustrates how streamflow varies over time for a given point on a stream.

Hydrologic Cycle – the continuous cycling of water from atmosphere to the earth via precipitation through surface and groundwater to the oceans and return to the atmosphere via evaporation from water bodies and transpiration by plants.

Incision – lowering of the streambed by erosion that occurs when the energy of the water flowing through a stream reach exceeds that necessary to erode and transport the bed material.

Lateral Bar - a gravel or sand deposit formed along the margin or side of the channel.

Longitudinal Profile – the configuration of a stream channel as seen from the right streambank and looking from upstream to downstream. Graphic representation of stream channel elevation changes from upstream to downstream.

Meander – a curve or bend in a river.

Meander Amplitude - distance between tangents drawn on the convex sides of successive bends.

Meander Wavelength - twice the linear distance between successive inflection points.

Meander Width Ratio – the quantitative expression of confinement determined by the ratio of belt width/bankfull width.

Mid-channel Bar - a gravel or sand deposit formed in the middle of a stream channel, not extending completely across the channel.

Morphological Equilibrium – a mean or average channel form about which short and long term, abrupt and gradual fluctuations occur as a stream channel adjusts its form to maintain a balance between sediment supply and sediment transport.

Nonpoint Source Pollution – pollution that originates from many diffuse sources (e.g. runoff from streets, yards, farm fields, etc.).

Normal High Water – high water mark that occurs annually in a water body. In streams, it occurs at bankfull flows.

Point Bar – a gravel or sand deposit on the inside of a meander bend.

Point Source Pollution – pollution that is discharged from a single, well-defined source (e.g., a pipe or ditch).

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Pool – a streambed feature characterized by deep, low gradient (less than 1%) water. Pools form under a variety of circumstances. In alluvial channels, lateral scour and currents near the cut bank in the meander bends form pools. Pools form where two streams converge. They are also created by the scouring action of current flowing against or over a channel obstruction.

Planform – the configuration or pattern of a stream as seen from above and described in terms of its relative form.

Radius of Curvature – the radius of the central portion of a channel meander bend.

Reach – a relatively homogeneous length of stream having a repetitive sequence of physical characteristics and habitat types.

Recurrence Interval – the average interval of time within which a given discharge event, such as a flood, will be equaled or exceeded one time.

Regime – low gradient, sand bed channels that exhibit a succession of bed forms (e.g., planar, ripples, dunes, and antidunes) with increasing velocity.

Rehabilitation – action taken to return a stream to as near its original condition as practical.

Restoration – action taken to return a stream to its original condition.

Riparian Buffer – a vegetated zone of grasses, shrubs and/or trees adjacent to a stream that filters runoff from adjacent land uses, shades the stream, stabilizes the streambanks, and provides wildlife habitat.

Riprap – hard materials, such as rock and boulders, used to protect a streambank from erosion.

Riffle – a streambed feature in alluvial channels characterized by shallow, fast moving water, a moderate gradient (1 – 4%), and hydraulic jumps over coarse material that causes ripples, waves, and eddies. Usually located in the crossover or straight reach between successive meander bends.

Run – a streambed feature characterized by swift moving water with a gradient greater than 4%, little or no surface agitation, waves, or turbulence, no major flow obstructions, and a substrate of variable particle size. Often found at the upstream end or entrance to a pool.

Sediment Transport – the motion or conveyance of sediment by flowing water, which is initiated once the threshold for erosion or movement has been exceeded. Finer materials are usually carried in suspension while larger particles tend to roll, slide, or hop along the streambed.

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Sinuosity – The ratio of channel length (along the thalweg) between two points in a channel to the straight-line distance between the same two points. A measure of how much a stream meanders.

Slope – the change in elevation of the bed or water surface over a measured length of stream channel.

Step-pools – bed features in steep stream reaches characterized by large material (e.g., boulders, logs) organized into discrete channel spanning accumulations that form a series of steps separating pools.

Stream – a natural watercourse containing flowing water for at least part of the year. Streams in natural channels may be classified as follows:

Ephemeral – one that has no baseflow component because its channel is above the water table at all times. As a consequence it carries water only during or immediately after a storm.

Intermittent – one that carries water part of the year, receiving groundwater discharge when the water table is high and/or receives water from springs or snow melt. It ceases to flow above the streambed when losses from evaporation or seepage exceed the available streamflow.

Perennial – one that has fairly stable groundwater flow and carries water year-round in most years.

Streambank Erosion – the detachment and entrainment of stream bank material that results from the hydraulic forces associated with flowing water, gravitational forces, or a combination of these two forces.

Streambed Erosion – the lifting and entrainment of streambed material that results from the hydraulic forces associated with flowing water.

Streamflow – that portion of precipitation which reaches the stream channel from shallow subsurface flow, groundwater, and overland flow.

Stream Order – a hierarchical ranking method for streams that characterizes the degree of branching. A first order stream has no forks or branches. Two first order streams flow together to form a second order stream, two second order streams combine to make a third order stream, etc.

Substrate – the mineral and organic material of which a streambed is composed.

Terrace – a relatively level or gently inclined land surface in alluvial valleys that is elevated above an active stream channel in a step-like arrangement of a slope. Terraces are created when a stream incises and abandons its floodplain.

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Thalweg – the path of the stream that follows the deepest part of the channel. Generally the thalweg is located along the outside of the bend in a meander and near the center of the channel in a crossover.

Velocity – the rate or speed at which water flows downstream. Usually measured in feet per second – ft/s.

Watershed - an area of land that drains surface and groundwater, sediment, and dissolved materials into a particular stream.

Wetlands – land areas that wet at least for part of the year, are poorly drained, and are characterized by hydrophytic vegetation, hydric soils, and wetland hydrology.

Wetted Perimeter (P) - the distance along the streambed and banks at a cross-section, where they contact the water. A close approximation is $W + 2D$.

Width (W) - the horizontal distance across the channel at a given discharge.

Width/Depth Ratio (W/D) - describes the dimension and shape of the channel as the ratio of channel width to mean depth.