

STREAM RESTORATION GLOSSARY

OVERVIEW: Following is a glossary of terms commonly used in stream restoration. Not all of the terms appear in the plans, and the list is intended as a general reference.

Aggradation -- A progressive buildup or raising of the channel bed and floodplain due to sediment deposition, geologic process by which stream beds are raised in elevation and floodplains are formed.
Aggradation is an indicator that a change in the stream's discharge and/or bedload characteristics is taking place. Opposite of degradation.

Alluvial -- Deposited by running water.

Alluvium -- Sediment or loose materials such as clay, silt, sand, gravel, and larger rocks deposited by moving water.

Anabranch -- A diverging branch of a river which re-enters the main stream.

Aquatic ecosystem -- Any body of water, such as a stream, lake or estuary, and all organisms and nonliving components within it, functioning as a natural system.

Aquatic habitat -- Habitat that occurs in free water.

Armoring -- A natural process where an erosion-resistant layer of relatively large particles is established on the surface of the stream bed through removal of finer particles by stream flow.
A properly armored stream bed generally resists movement of bed material at discharges up to approximately 3/4 bankfull depth.

Avulsion -- A change in channel course that occurs when a stream suddenly breaks through its banks - typically bisecting an over extended meander arc.

Backwater -- (1) A small, generally shallow body of water attached to the main channel, with little or no current of its own.
(2) A condition in subcritical flow where the water surface elevation is raised by downstream flow impediments.

Backwater pool -- A pool that formed as a result of an obstruction like a large tree, weir, or boulder.

Bank stability -- The ability of a stream bank to counteract erosion or gravity forces.

Bankfull channel depth -- The maximum depth of a channel within a riffle segment when flowing at a bankfull discharge.

Bankfull channel width -- The top surface width of a stream channel when flowing at a bankfull discharge.

Bankfull discharge -- The stream discharge corresponding to the water stage which first overtops the natural banks. This flow occurs, on average, about once every 1 to 2 years.

Bankfull width -- The width of a river or stream channel between the highest banks on either side of a stream.

Bar -- An accumulation of alluvium (usually gravel or sand) caused by a decrease in sediment transport capacity on the inside of meander bends or in the center of an overwide channel.

Barrier -- A physical block or impediment to the movement or migration of fish, such as a waterfall (natural barrier) or a dam (man-made barrier).

Base flow -- The sustained portion of stream discharge that is drawn from natural storage sources, and not affected by human activity or regulation.

Bed load -- Sediment moving on or near the stream bed and transported by jumping, rolling, or sliding on the bed layer of a stream. See also suspended load.

Bed material -- The sediment mixture of which a stream bed is composed.

Bed material load -- That portion of the total sediment load with sediments of a size found in the stream bed.

Bed roughness -- A measure of the irregularity of the stream bed as it contributes to flow resistance. Commonly expressed as a Manning 'n' value.

Bed slope -- The inclination of the channel bottom, measured as the elevation drop per unit length of channel.

Bioengineering -- Use the native and natural materials to stabilize stream banks.

Bole -- Term referring to the stem or trunk of a tree.

Braided channel -- A stream characterized by flow within several channels which successively meet and divide. Braiding often occurs when sediment loading is too large to be carried by a single channel.

Braiding (of River Channels) -- Successive division and rejoining of river flow with accompanying islands.

Buffer strip -- A barrier of permanent vegetation, either forest or other vegetation, between waterways and land uses such as agriculture or urban development, designed to intercept and filter out pollution before it reaches the surface water resource.

Canopy -- A layer of foliage in a forest stand. This most often refers to the uppermost layer of foliage, but it can be used to describe lower layers in a multistoried stand.
Leaves, branches and vegetation that are above ground and/or water that provide shade and cover for fish and wildlife.

Cascade -- A short, steep drop in stream bed elevation often marked by boulders and agitated white water.

Catchment -- (1) The catching or collecting of water, especially rainfall. (2) A reservoir or other basin for catching water. (3) The water thus caught.
(4) A watershed.

Channel -- An area that contains continuously or periodically flowing water that is confined by banks and a stream bed.

Channelization -- The process of changing (usually straightening) the natural path of a waterway.

Cobble -- Substrate particles that are smaller than boulders and larger than gravels, and are generally 64-256 mm in diameter. Can be further classified as small and large cobble.

Coconut fiber fabric -- Fabric composed of coconut husk and other vegetative fibers which help stabilize slopes and encourage plant growth within the fiber.

Coconut fiber log -- Cylindrical structures composed of coconut husk and other vegetative fibers bound together and installed at the toe of stream banks to trap sediment and encourage plant growth within the fiber rolls.

COIR -- Natural coconut fiber.

Confluence -- (1) The act of flowing together; the meeting or junction of two or more streams; also, the place where these streams meet.
(2) The stream or body of water formed by the junction of two or more streams; a combined flood.

Critical shear stress -- The minimum amount of shear stress exerted by stream currents required to initiate soil particle motion.
Because gravity also contributes to stream bank particle movement but not on stream beds, critical shear stress along stream banks is less than for stream beds.

Debris flow -- A rapid moving mass of rock fragments, soil, and mud, with more than half of the particles being larger than sand size.

Debris torrent -- Rapid movement of a large quantity of materials (wood and sediment) down a stream channel during storms or floods.
This generally occurs in smaller streams and results in scouring of streambeds.

Degradation -- (1) A progressive lowering of the channel bed due to scour.
Degradation is an indicator that a change in the stream's discharge and/or sediment load is occurring. The opposite of aggradation.
(2) A decrease in value for a designated use.

Dike -- (1) (Engineering) An embankment to confine or control water, especially one built along the banks of a river to prevent overflow of lowlands; a levee.
(2) A low wall that can act as a barrier to prevent a spill from spreading. (3) (Geology) A tabular body of igneous (formed by volcanic action) rock that cuts across the structure of adjacent rocks or cuts massive rocks.

Diversion -- The transfer of water from a stream, lake, aquifer, or other source of water by a canal, pipe, well, or other conduit to another watercourse or to the land, as in the case of an irrigation system.

Diversion channel -- (1) An artificial channel constructed around a town or other point of high potential flood damages to divert floodwater from the main channel to minimize flood damages. (2) A channel carrying water from a diversion dam.

Drainage area -- The total surface area upstream of a point on a stream that drains toward that point. Not to be confused with watershed. The drainage area may include one or more watersheds.

Drainage basin -- The total area of land from which water drains into a specific river.

Dredging -- Removing material (usually sediments) from wetlands or waterways, usually to make them deeper or wider.

Dry wash -- A stream bed that carries water only during and immediately following rain storms.

Ecosystem -- Recognizable, relatively homogeneous units, including the organisms they contain, their environment, and all the interactions among them.

Eddy -- A circular current of water, usually resulting from an obstruction.

Embankment -- An artificial deposit of material that is raised above the natural surface of the land and used to contain, divert, or store water, support roads or railways, or for other similar purposes.

Energy dissipation -- The loss of kinetic energy of moving water due to internal turbulence, bottom friction, large rocks, debris, or other obstacles that impede flow.

Ephemeral streams -- Streams which flow only in direct response to precipitation and whose channels at all times above the water table.

Erosion -- Wearing away of rock or soil by the gradual detachment of soil or rock fragments by water, wind, ice, and other mechanical, chemical, or biological forces.

Estuary -- A coastal body of water that is semi-enclosed, openly connected with the ocean, and mixes with freshwater drainage from land.

Fascine -- Dormant branch cuttings bound together in cylindrical bundles and placed in shallow trenches on slopes of stream banks.

Flash flood -- A sudden flood of great volume, usually caused by a heavy rain. Also, a flood that crests in a short length of time and is often characterized by high velocity flows.

Floodplain -- Land built of sediment that gets covered with water as a result of the flooding of a nearby stream.

Floodplain (100-year) -- The area adjacent to a stream that is on average inundated once a century.

Flow -- The amount of water passing a particular point in a stream or river, usually expressed in cubic-feet per second (cfs).

Fluvial -- Migrating between main rivers and tributaries. Of or pertaining to streams or rivers.

Fluvial -- Pertaining to streams or produced by stream action.

Ford -- A shallow place in a body of water, such as a river, where one can cross by walking or riding on an animal or in a vehicle.

Forest canopy -- The cover of branches and foliage formed collectively by the crowns of adjacent trees and other woody growth.

Gabion -- A wire basket or cage that is filled with gravel or cobble and generally used to stabilize stream banks.

Geomorphology -- A branch of both physiography and geology that deals with the form of the earth, the general configuration of its surface, and the changes that take place due to erosion of the primary elements and in the buildup of erosional debris.

Glide -- A section of stream that has little or no turbulence.

Headwater -- Referring to the source of a stream or river.

Hydraulic gradient -- The slope of the water surface. See also stream bed gradient.

Hydraulic radius -- The cross-sectional area of a stream divided by the wetted perimeter.

Hydrograph -- A curve showing stream discharge over time.

Hydrology -- The scientific study of the water of the earth, its occurrence, circulation and distribution, its chemical and physical properties, and its interaction with its environment, including its relationship to living things.

Incised river -- A river that erodes its channel by the process of degradation to a lower base level than existed previously or is consistent with the current hydrology.

Inflow -- Water that flows into a stream, lake, reservoir or forebay during a specified period.

In stream cover -- The layers of vegetation, like trees, shrubs, and overhanging vegetation, that are in the stream or immediately adjacent to the wetted channel.

In stream flows -- (1) Portion of a flood flow that is contained by the channel. (2) A minimum flow requirement to maintain ecological health in a stream.

In stream use -- Use of water that does not require diversion from its natural watercourse. For example, the use of water for navigation, recreation, fish and wildlife, aesthetics, and scenic enjoyment.

Intermittent stream -- Any nonpermanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

Invasives -- Plants which encroach on other species, taking over a stream bank.

Invertebrate drift -- Stream and terrestrial invertebrates that float with the current.

J vane -- In stream structure composed of rocks, constructed for the purpose of reducing shear stress on stream banks and directing flow towards the center of the channel, where the loop of the 'J' forms a scour pool over time.

Large woody debris (LWD) -- Pieces of wood larger than 10 feet long and 6 inches in diameter, in a stream channel.

Levee -- An embankment constructed to prevent a river from overflowing (flooding).


Live stakes -- Live, rootable, dormant branch cuttings inserted and tamped into the ground on slopes of stream banks.

Log vane -- In stream structure composed of logs, rocks and root wads constructed for the purpose of reducing shear stress on stream banks and directing flow towards the center of the channel.

Mainstem -- The principle channel of a drainage system into which other smaller streams or rivers flow.

Mean annual discharge -- Daily mean discharge averaged over a period of years. Mean annual discharge generally fills a channel to about 1/3 of its bankfull depth.

Mean velocity -- The average cross-sectional velocity of water in a stream channel. Surface values typically are much higher than bottom velocities. May be approximated in the field by multiplying the surface velocity, as determined with a float, times 0.8.

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PROJECT LEADER: GAE	DRAWN BY: MBL
DESIGNED BY: SAR	CHECKED BY: WCH
STORMWATER GLOSSARY	SHEET 134a OF 140

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