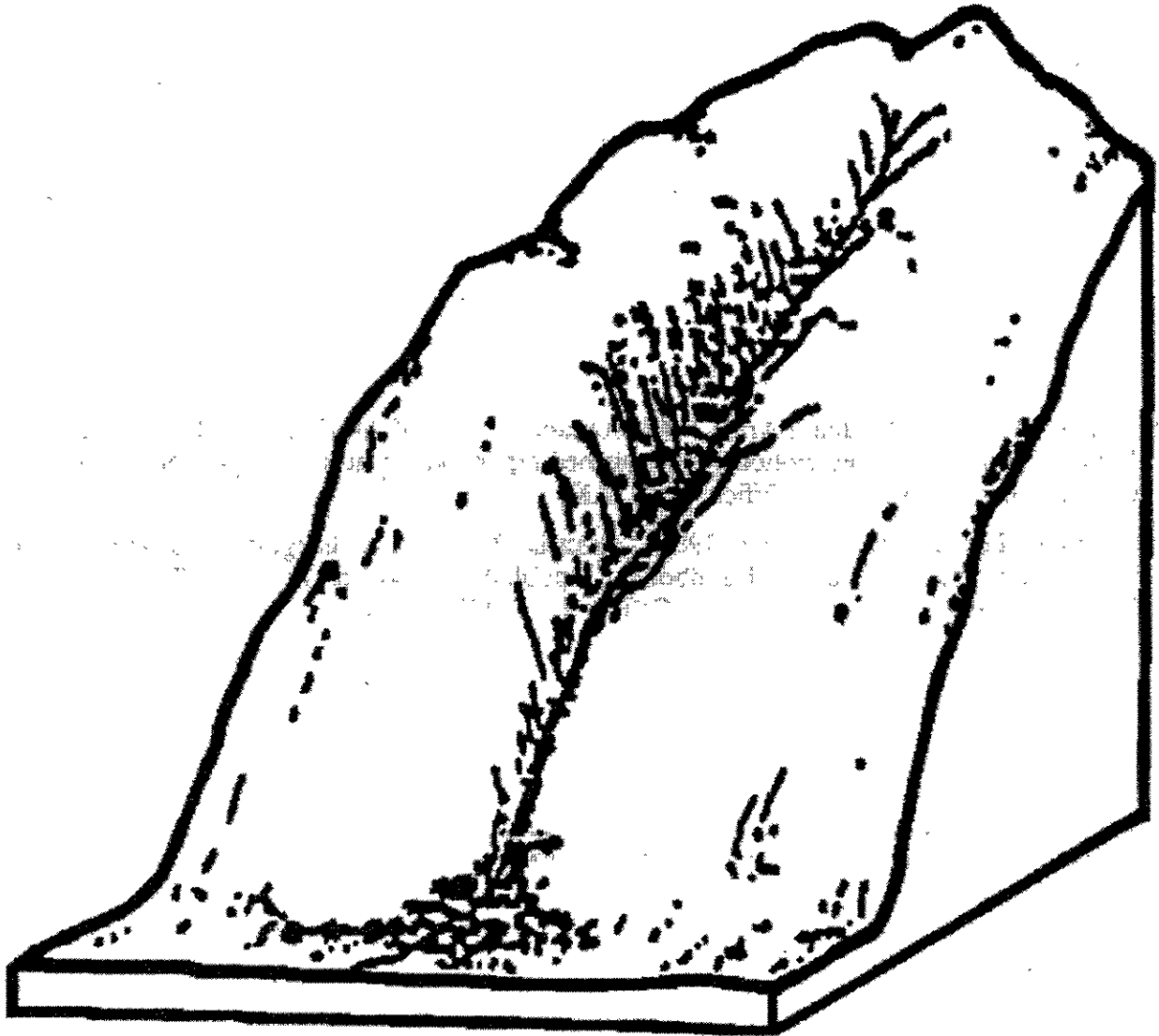


High Gradient Contained Process Group



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GLOSSARY

- Anadromous Species:** Species of fish, particularly Pacific salmon, trout and char, that ascend rivers and streams to breed.
- Alluvial Cone:** The material washed down mountain and hill slopes by ephemeral streams and deposited at the mouth of gorges or V-notch ravines in the form of a steep conical mass descending equally in all directions from the point of issue. (Fairbridge 1968)
- Alluvial Fan:** A body of alluvium, with or without debris flow deposits, whose surface forms a segment of a cone that radiates downslope from the point where the stream emerges from a narrow valley (or V-notch) onto a plain. (Hawley and Parsons, 1980)
- Alluvium:** Unconsolidated clastic material, including gravel, sand, silt, and clay, deposited by running water.
- Aquatic Habitat Capability:** Synopsis of the ability of a channel type to support anadromous fish species (provide spawning and rearing habitat).
- ARA (Available Rearing Area - habitat):** The place or site in a stream where fish live during their growth period.
- ASA (Available Spawning Area - habitat):** The place or site in a stream where fish breed and eggs are incubated. Available refers to making the assessment of spawning area during a particular stream flow stage.
- Backwater:** A pool type formed by an eddy along channel margins from obstructions such as bars, root wads, and boulders, or resulting from back-flooding upstream from an obstructional blockage. The backwater is sometimes separated from the channel by sand/gravel bars. (AFS 1985)
- Bankfull Depth:** The mean water depth which occurs during a bankfull stream flow event.
- Bankfull Width:** The mean water width which occurs during a bankfull stream flow event.
- Barrier:** A vertical falls, steep cascade, or high velocity chute in a stream channel that prevents migration of anadromous species.
- Bedrock Control:** A section of a stream channel that is composed of bedrock material. Stream bed and banks consist of the underlying bedrock.
- Bed Scour:** The erosion of the channel bed substrate.
- Boulders:** Large stream bed material, 25.4 centimeters to .914 meters (10 inches to 3 feet) in diameter.
- Cascade:** A stream flow condition and habitat type characterized by swift current, exposed rock and boulders, high gradient, considerable turbulence and surface agitation, and consisting of a stepped series of drops. (AFS 1985)
- Channel:** A natural waterway of perceptible extent that periodically or continuously contains moving water. It has a definite bed and banks which serve to confine the water. (AFS 1985)
- Aggrading channels:** Stream channels that are subject to higher than normal sediment loads (sediment loads exceed the carrying capacity of the stream). These channels are experiencing long term increase in sediment load.

GLOSSARY

Degrading channels: Stream channels that are experiencing a long term decrease in sediment load and/or an increase in flow volume and velocity. Bed scour and loss of sediment deposits are characteristic.

Channel Gradient: The angle between the water surface and the horizontal plane, expressed in percent.

Channel Pattern: The configuration in plan-view of a stream channel. Patterns used in Region 10 are braided, multiple, and straight.

Channel Sideslope: Refers to the lower and upper banks of the stream channel. The sideslope differs from the stream bottom in material composition and gradient. Normally the sideslope is the first significant slope break from the wetted stream bottom, in the cross sectional profile of the channel.

Channel Stability: The sensitivity of a channel area to disruptions in its physical structure. Under undisturbed conditions, natural channels demonstrate wide variability in withstanding physical disruptions without experiencing changes in their ability to pass streamflow, process sediment, or provide habitat. Stable channels are capable of withstanding an appreciable amount of disruption with little effect on function. In contrast, unstable channels are ones which respond readily to significant disruptions.

Channel Type: Stream segments which have fairly consistent physical characteristics.

Cirque: A semicircular form found in glaciated mountains. Described as an armchair hollow possessing three elements - a steep, nearly vertical headwall, a concave floor meeting the headwall in a sharp slope break, and a lip or threshold at the entrance which may be bedrock, glacial moraine, or both. (Fairbridge 1968)

Cobble (rubble): Stream bed material ranging in size from 6.1-25.4 centimeters (2.4-10 inches) in diameter.

Coho Spawning and Rearing Capability: The capacity of habitat in a stream to support the breeding (spawning) of adult coho salmon, incubation of their eggs, and the growth (rearing) of immature coho salmon.

Containment: Refers to the degree of rigidity of the stream channel's banks. A bedrock channel is well contained due to the high erosion resistance of its banks. A glacial channel is normally poorly contained as its banks consist of alluvial material that is easily eroded by the stream flow.

Debris Torrent: Mass erosion process which occurs when a debris avalanche enters a high gradient stream channel, mixes with water, and continues downstream as a slurry of mud, large woody debris, and water. Debris torrents often scour the channel through which they pass, then deposit debris and sediment on the footslope or valley floor.

Downcutting: Fluvial process by which stream flow scours bed material, thereby lowering channel.

Estuarine (area): The environmental system of an estuary and those transitional areas which are consistently influenced or affected by water from an estuary. (Schwarz et.al., 1976)

Estuary: All or part of the mouth of a river or stream having an open, natural connection with the sea and within which sea water is measurably diluted by freshwater runoff (the tide meets with river currents or flows). (Schwarz et.al., 1976)

Fines (fine sized bed material): Bed material less than 4 mm (0.16 in) in diameter.

- Fish Passage Hazard:** This refers to the potential for creating conditions with bridges or culverts that would prevent adult or juvenile anadromous fish from moving into areas where they breed or into sites that are necessary for their growth or survival.
- Flood Plain:** That portion of a stream valley adjacent to the channel which is built by sediments of the stream and which is covered with water when the stream overflows its banks at flood stage. Also, the nearly level land situated on either side of a channel which is subject to overflow flooding. (Schwarz et.al., 1976)
- Flow Containment:** The ability of a stream channel to contain large stream flow events within the channel area.
- Fluvial:** Geomorphic processes associated with running water; of or pertaining to rivers.
- Footslope:** The geomorphic component that forms the inner, gently inclined surface at the base of a hillslope or mountainslope. (Hawley 1980)
- Foreland:** Broad, low relief plain composed primarily of parallel beach ridges, dune chains, and inwardly curved spits, subject to wave action. (Fairbridge 1968)
- Glacial Outwash Plain:** A broad, low relief landform formed by glacial deposits consisting of washed bedload materials (gravel and sand). Normally situated in a flat, glacial valley floor preceding a glacier or as a broad, flat foreland cut by braided, glacially fed streams.
- Glide:** Very low velocity stream flow creating a calm surface condition with water flowing smoothly and gently.
- Hillslope:** The steeper part of a hill between its summit and the drainage line, valley flat, or depression floor at the base of the hill. A hill is defined as a natural elevation of the land surface rising as much as 300 meters (1000 feet) above the surrounding lowlands. Slopes generally exceed 15 percent. (Hawley 1980)
- Hydrologic Function:** The capacity of a stream to move or to store bedload material and suspended sediment. Stream gradient, the resultant stream power, and size of material are critical factors. Stream power is the rate of doing work or a measure of the energy available for moving rock, sediment, or woody debris in the stream channel, as determined by discharge, water surface slope, and the specific weight of water. (AFS 1985)
- Incision Depth:** The vertical distance between the channel bottom at the thalweg and the first significant slope break occurring above the bankfull stage point. Channels adjacent to flood plains typically lack any adjacent sideslope, and, by definition, have low incision depths.
- Indicator Species:** A species whose presence or absence and abundance are used as indicators of environmental conditions. (AFS 1985)
- Knickpoint:** Any interruption or break in slope: a point of abrupt inflection in the longitudinal profile of a stream or of its valley. (Hawley 1980)
- Landform:** Recognizable physical forms of the earth's surface, having characteristic shapes and produced by natural causes. The landforms which typically occur in the Chatham Area have been classified and described in the terrestrial portion of the Integrated Resource Inventory: Descriptive I.D. Legend Handbook (USDA, 1982 and 1985).

GLOSSARY

- Large Woody Debris (LWD):** A term used to describe logs, tree boles, rootwads, and limbs that are in, on, or near the stream channel. Current usage of the term defines LWD as woody material greater than 10.2 centimeters (4 inches) in diameter and equal to or greater than 3.05 meters (10 feet) in length. (AFS 1985)
- Littoral:** The relatively shallow (up to approximately 9.1 meters [30 feet] in depth) area of a lakeshore where sunlight can penetrate.
- Lowlands:** Usually refers to low elevation and low relief valley bottom landforms.
- Median:** The middle of a distribution of values such that 50% of the values are higher and 50% are lower.
- Meltwater:** Runoff flow produced by a melting mountain glacier, valley glacier, or mountain snowfield.
- Moraine:** A glacial landform created by debris deposits during both growth and recession. The moraine is an accumulation of drift, with an initial topographic expression of its own. It is built chiefly by the direct action of glacial ice. Examples are lateral and terminal moraines, usually composed of glacial till. (Hawley 1980)
- Mountainslope:** A natural elevation of the land surface, rising more than 300 meters (1000 feet) above surrounding lowlands and generally having a steepness of 25% slope or greater. (Hawley 1980)
- Muskeg:** A bog, usually sphagnum, frequently with tussocks of deep accumulations of organic material, growing in wet, poorly drained, boreal regions, often areas of permafrost. (Hawley 1980)
- Outwash:** Stratified detritus (sand and gravel) removed or washed out from a glacier by meltwater streams and deposited in front of or beyond the terminal moraine or the margin of an active glacier. (Hawley 1980).
- Overwinter Habitat:** The place or site in a stream or lake where young, immature fish can survive during winter.
- Palustrine:** Pertaining to shallow low velocity backwater sloughs, swamps, bogs, and muskeg ponds and their outlet streams or any ponded environment. Ponded is a condition in which free water covers the soil surface and is removed only by percolation, evaporation, or transpiration. (Hawley 1980)
- Peak Flow Magnitude:** The relative size of the annual flood event, represented by the estimated bankfull streamflow. Size classes used for describing relative magnitudes are Low (less than 500 cfs), Moderate (500 - 1000 cfs), High (1000 - 1750 cfs), and Very High (greater than 1750 cfs). (cfs = cubic feet per second and is used to quantify the discharge from a stream or river.)
- Periglacial:** The processes, conditions, areas, climates, and topographic features at the immediate margins of former and existing glaciers and ice sheets, influenced by the cold temperature of the ice. (Hawley 1980)
- Pink Spawning Capability:** The capacity of habitat in a stream to support the breeding (spawning) of adult pink salmon and the incubation of their eggs. Unlike coho salmon, pink salmon young migrate directly to the ocean after they hatch.
- Placid Flow:** A very, low velocity stream flow condition in a natural channel. Usually occurs in a deep, wide, low gradient segment of a stream channel.

- Plant Association:** A potential natural plant community (climax plants) of definite floristic composition and uniform appearance. (Martin et.al., 1985)
- Plant Community:** A unit of vegetation that is relatively uniform in structure and floristic composition and consists of competing plants of one or more species in a common location. (Martin et.al., 1985)
- Nonforested Community:** A plant community of less than 10% crown cover by trees, less than 7.6 meters (25 feet) in height.
- Pond:** An increase in water surface elevation upstream of a blockage or an obstruction. Ponds are often created by beaver dams. Flow velocity approaches laminar flow conditions.
- Rearing Habitat Area:** The place or site in a stream where juvenile fish live during their growth period. (AFS 1985)
- Resident Spawning and Rearing Capability:** The capacity of habitat in a stream to support adult breeding (spawning), incubation of their eggs, and growth (rearing) of resident immature trout or char. (AFS 1985)
- Resident Species:** Species of fish that live in freshwater streams for their entire life cycle. Used in this field guide to refer to Dolly Varden char, rainbow trout, and cutthroat trout.
- Riparian:** Pertaining to anything connected with or immediately adjacent to the banks of a stream or other body of water. (AFS 1985)
- Riparian Vegetation:** Vegetation growing on or near the banks of a stream or body of water on soils that exhibit some wetness characteristics during some portion of the growing season. (AFS 1985)
- Rootwad:** The root mass of the tree, butt end. (AFS 1985)
- Rubble:** Stream bed material ranging in size from 6.09-25.4 centimeters (2.4 to 10 inches) in diameter.
- Scrub Timber:** Vegetation dominated by shrubs. In the Preliminary Classification for Vegetation of Alaska, treeless vegetation (or with less than 10% tree crown cover) and with shrubs comprising 25% or more of the absolute crown cover. (Gabriel and Talbot, 1984)
- Secondary Channel (side channel):** Lateral channel with an axis of flow parallel to the mainstem and fed by the main stem. (AFS 1985)
- Sediment:** Fragmented material that originates from weathering of rocks and decomposition of organic material that is transported by, suspended in, and eventually deposited in the stream bed. (AFS 1985)
- Sediment deposition:** The process of sediment precipitating out of suspension in the water column. Heavier particles will drop out first, then the lighter particles. Normally, lower gradient reaches will be the zones of deposition as flow velocities are less, allowing for precipitation of particles to occur.

GLOSSARY

Sediment routing: Describes the entire process of transporting the sediment from the source area to the final zone of deposit (i.e. estuary). Particles are routed through the stream network of a watershed. A normal progression would be from the steep mountainslope channels, where mass wasting is common, through the moderate gradient transport channels, and finally to the low gradient, alluvial or estuary channels.

Sediment storage: A stream will accumulate sediment in zones of low velocity, low gradient until high flow events occur to mobilize the stored deposits of sediment and transport them further down the system.

Sediment transport: The movement of sediment through the stream, from the source area to a point of deposition.

Sideslope: The slope which occurs directly adjacent to, and connected with, the channel lower bank. Upper banks, if present, will compose part, but not necessarily all, of this slope.

Slough: Normally a side channel to a mainstem channel, with low velocity stream flow. Occurs in a flood plain, delta, or glacial outwash plain. (Fairbridge 1968)

Spawning Habitat Area: The place or site in a stream where fish breed and eggs are incubated before hatching. (AFS 1985)

Sport Fish: Fish, shellfish, or other fishery resources taken for personal use, subject to regulations, and not for sale or barter.

Stream: A natural water course containing flowing water, at least part of the year, supporting a community of plants and animals within the stream channel and the riparian vegetation zone. (AFS 1985)

Stream Adjacent Roads: Roads, either temporary or permanent, which occur upon the channel's adjacent sideslope.

Stream Bed: The substrate plane bounded by the stream banks, over which the water column moves. Also called stream bottom. (AFS 1985)

Stream Bank: The portion of the channel cross section that restricts lateral movement of water at normal water levels. The bank often has a gradient steeper than 45 degrees and exhibits a distinct break in slope from the stream bottom. An obvious change in substrate may be a reliable delineation of the bank. (AFS 1985)

Lower bank: The periodically submerged portion of the channel cross section from the normal high water line to the water's edge during the summer low flow period.

Upper bank: That portion of the topographic cross section from the break in the general slope of the surrounding land to the normal high water line.

Stream Crossing Site Hazard: The potential for conditions to exist within the active channel which would result in aquatic resource damage if bridges or culverts were constructed without special design considerations and/or mitigation.

Stream Reach: Any specified length of stream or a relatively homogeneous section of stream having a repetitious sequence of physical characteristics and habitat types. (AFS 1985)

Substrate: The mineral and/or organic material that forms the bed of the stream. (AFS 1985)

GLOSSARY

- Torrent (glacial):** Flow condition in high gradient stream channels produced by rapid snowmelt or glacial ice melt. Characterized by high stream flow velocity, near bankfull discharge, and standing waves. (AFS 1985)
- Tributary Stream Habitat:** Those unmapped channels (unclassified according to channel types) which join a larger, unmapped stream channel. In lower gradient landforms, such as flood plains and estuaries, these small channels can have important habitat value and management significance.
- Uncontained Stream:** Not confined to an entrenched or well defined channel.
- Upper Valley:** Described as the higher elevation upper third in the longitudinal profile of a valley floor.
- Underfit Streams:** Streams which have undergone drastic reduction of discharge and which are now too small for the valleys or channels which they occupy. These channels occur in the Situk River basin of the Yakutat Forelands. (Fairbridge 1968)
- Upwelling:** The rising of cold, heavy, subsurface water toward the surface. (AFS 1985)
- Value Class I:** Streams with anadromous (fish ascending from oceans to breed in fresh water) or adfluvial (fish ascending from fresh water lakes to breed in streams) lake and stream habitat. Also included is the habitat upstream from migration barriers known to be reasonable enhancement opportunities for anadromous fish and habitat with high value resident sport fish populations. (USDA 1985)
- Value Class II:** Streams with resident fish populations and generally steep (often 6-15 percent) gradient (can also include streams from 0-5 percent gradient where no anadromous fish occur). These populations have limited sport fisheries values. These streams generally occur upstream of migration barriers or are steep gradient streams with other habitat features that preclude anadromous fish use. (USDA 1985)
- Value Class III:** Streams with no fish populations but have potential water quality influence on the downstream aquatic habitat. (USDA 1985)
- V-notch Ravine:** A very steep (greater than 15% gradient), deeply incised stream channel. Usually situated on steep mountainslopes or hillslopes. HC6 and HC4 channel types are commonly described as V-notches.
- Wash Load:** That part of the sediment load in a stream which, because of its fine size, has such a small settling velocity that it is held in suspension as colloidal particles. It is composed of exceedingly fine particles having vanishingly low rates of settling. (Leopold et.al., 1964)