

Appendix 1:

Glossary of Hydrologic and Geomorphic Terms

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Discussion Draft

This appendix has been made available for discussion purposes in advance of the final *Compendium* publication. While the material has been peer-reviewed, we encourage your comments on this draft. Feedback may be forwarded to Robin.Pike@forrex.org until July 31, 2006.

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APPENDIX 1: GLOSSARY OF HYDROLOGIC AND GEOMORPHIC TERMS

A

Ablation	“The process by which ice and snow waste away as a result of melting,” evaporation and (or) sublimation. (1):1 quote ¹
Absorption	“The taking up, assimilation, or incorporation of molecules, ions, or energy into the interior of a solid or liquid.” <i>Compare to adsorption.</i> (2):709 quote
Active Floodplain	Lowlands bordering a river, which are subject to flooding on a periodic basis. Floodplains are composed of sediments carried by rivers (alluvium) and deposited on land during flooding. The active area is characterized by recently deposited river-borne debris, limited terrestrial vegetation, and recent scarring of trees by material transported by floodwaters. (3):Section A paraphrase
Acute Toxicity	“Toxic or poisonous effect that occurs during or soon after exposure to a toxicant. The term usually refers to a lethal effect (death) or to a major sub-lethal effect such as greatly altered behaviour or physiology. Formal acute toxicity tests establish the concentration of a substance that kills a specified fraction of the test organisms (usually 50%) within a specified time (usually 96 hours or less).” <i>Compare to chronic toxicity.</i> (2):709 quote
Adfluvial	“Migrating between lakes and rivers or streams.” (2):709 quote
Adsorption	“Physical adhesion of molecules of gases, liquids, or dissolved substances to the surfaces of solids or liquids with which they are in contact.” <i>Compare to absorption.</i> (2):709 quote
Advection	The transfer of heat, cold, humidity, solutes, pollutants or other properties by the horizontal movement of an air mass or water current. <i>Compare to convection.</i> (28) pers. comm.
Affluent (Stream)	A branch or tributary stream that flows into a larger stream channel. (1):5 paraphrase

¹ Citations indicate reference as numbered in list of references following glossary, page number, and whether the definition has been quoted or paraphrased; for example, “(1):1 quote” indicates a quote from page 1 of reference 1. Pers. comm. indicates definitions generated by the compilers of this glossary.

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Aggradation	“The geologic process by which streambeds, floodplains and the bottoms of other water bodies are raised in elevation by the deposition of material eroded and transported from other areas. It is the opposite of degradation.” (4):G-1 quote
Albedo	“The ratio of reflected to incident radiation.” The albedo is dependent on surface properties such as colour and texture, which influence the absorption rate and angle of solar incidence, respectively. “Freshly fallen snow, for example, reflects more solar radiation back into the atmosphere than grass or forest,” indicated by its higher albedo. (5):Section A quote; (6):297 paraphrase; (6):297 quote
Alevin	“Larval salmonid that has hatched but has not fully absorbed its yolk sac, and generally has not yet emerged from the spawning gravel.” (2):709 quote
Allochthonous Material	“Derived from outside a system, such as leaves of terrestrial plants that fall into a stream.” <i>See autochthonous material.</i> (2):710 quote
Alluvial	“Deposited by running water.” (2):710 quote
Alluvial Fan	“A relatively flat to gently sloping landform composed of predominantly coarse grained soils, shaped like an open fan or a segment of a cone, deposited by a stream where it flows from a narrow mountain valley onto a plain or broad valley, or wherever the stream gradient suddenly decreases.” (7):D.1 quote
Alluvium	Sediment transported and deposited by flowing water. Particle size distribution of deposits is dependent on water energy, which varies with channel gradient, lateral distance from stream, or presence of flow obstacles, resulting in deposits that tend to be sorted or stratified into components (e.g., gravels, sands, silts, clays). (1):8 paraphrase; (6):297 paraphrase; (8):10,11 paraphrase
Anabranched	“A channel that branches off from a river, re-joining it further downstream.” (9):Glossary terms quote
Anadromous	“Fish that breed in freshwater but live their adult life in the sea. On the Pacific coast, anadromous fish include all the Pacific salmon, steelhead trout, some cutthroat trout and Dolly Varden char, lampreys and eulachons.” (4):G-1 quote
Anastomosing	“The branching and rejoining of channels to form a netlike pattern.” (1):11 quote

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Anisotropic Medium	“A medium having properties that vary depending on the direction of measurement. An example would be hydraulic conductivity that may be different in [the] vertical and lateral directions due to layering and alignment of the soil grains.” (29):Appendix:4 quote
Annual Flood	“The highest peak discharge of a stream in a water year.” <i>See flood.</i> (1):122 quote
Aquifer	A saturated permeable subsurface layer (often sand, gravel, sandstone, or limestone) that stores or transmits groundwater. “Use of the term is usually restricted to those water-bearing structures capable of yielding water in sufficient quantity to constitute a usable supply.” (2):710 paraphrase; (1):14 quote
Autochthonous Material	Material derived within a system, such as organic matter produced instream. Includes primary producers as well as aquatic biota such as invertebrates and fishes. <i>See allochthonous material.</i> (2):710 paraphrase
Avulsion	“An abrupt change in the course of a stream whereby the stream leaves its old channel for a new one.” (7):D.1 quote
B	
Backscarp	<i>See escarpment.</i>
Backwater Effect	Upstream increase in water level produced when a barrier such as a dam or downstream flooding obstructs flow. (7):D.1 paraphrase
Bankfull (Stage)	Water surface elevation at which a stream first overflows its natural banks, spilling water onto the floodplain. (10):17 paraphrase
Base Flow	Streamflow coming from sustained subsurface sources, not directly from surface runoff. (1):24 paraphrase
Bedload	Sediment particles transported on or near the streambed by rolling and bouncing. (3):Section B paraphrase
Benthic	Pertaining to the bottom of aquatic environments. (11) pers. comm.
Benthos	“Animals and plants living on or within the substrate of a water body.” (2):711 quote
Bifurcate	The division of a stream channel into two branches or a fork in the stream channel. (11) pers. comm.

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Bioassay	Assessment of a substance (e.g., water sample) by testing its effect on the growth of an organism under controlled conditions and comparing the result with an agreed standard. (2):712 paraphrase; (5):Section B paraphrase
Biological Oxygen Demand (BOD)	“Amount of molecular oxygen that can be taken up by nonliving organic matter as it decomposes by aerobic biochemical action.” (2):712 quote
Braided Stream	Stream that forms a “network of branching and recombining channels separated by ... islands or channel bars.” (2):712 quote
Buffer Strip	Riparian area adjacent to streams or lakes left intact as a protective barrier. (2):712 paraphrase
C	
Capillary Fringe (Zone)	“The part of the vadose zone that lies just above the water table, where water can be drawn upward by capillary forces.” (30):553 quote
Catchment Area	<i>See drainage basin.</i>
Channel Density	The ratio of the total length of stream channels in a given area to the total area. Also termed stream density. (1):48 paraphrase; (2):715 paraphrase
Channelization	Straightening and (or) deepening a pre-existing channel, or constructing a new channel, for the purpose of runoff control or navigation. (4):G-2 paraphrase
Chronic Toxicity	“Toxic effect caused by long-term exposure to sub-lethal concentrations of a toxicant; sometimes refers to an effect manifested long after an exposure.” <i>See acute toxicity.</i> (2):713 quote
Colluvium	“Loose, weathered material brought to the foot of a cliff or some other slope by gravity.” (6):298 quote
Conduction	“The transmission of heat, electricity, or sound” through direct contact between molecules of the conducting material. (5):Section C:11 quote, paraphrase
Confluence	“The meeting or junction of two or more streams.” (1):61 quote
Convection	The transfer of energy in a fluid medium (water or air) “by the circulation of currents from one region to another.” (1):64 quote

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Creep	“Slow mass movement of soil and soil material down relatively steep slopes, primarily under the influence of gravity but facilitated by saturation with water and by alternate freezing and thawing.” (1):67 quote
D	
Debris	An accumulation of unsorted fragments of soil, rock, and sometimes large organic material (e.g., tree limbs). Also used to describe organic material transported within streams. (7):D.2 paraphrase
Debris Flood	“Transport of large volumes of sediment and woody debris down gully systems by large volumes of water.” “Debris floods do not behave as coherent flows” as the main constituent is water. (13):179,109 quotes
Debris Flow	“Rapid downstream movement of liquefied sediment and woody debris” as a coherent mass with “a plastic or semi-fluid motion similar to a viscous fluid.” Includes channelized “debris flows, debris torrents and mudflows.” <i>See slide.</i> (13):179 quote; (7):D.5, D.3 quotes
Debris Flow Fan	“A relatively steep sloping landform shaped like an open fan or a segment of a cone, deposited by a debris flow where it exits from a narrow mountain valley onto a plain or broad valley, or wherever the channel gradient suddenly decreases. Sometimes referred to as colluvial fan.” (7):D.3 quote
Debris Torrent	<i>See debris flow.</i>
Degradation	Removal of materials from one place to another via erosion, causing lowering of the elevation of streambeds and floodplains over time. The opposite of aggradation. Also used to describe the decrease of biological productivity or diversity. <i>See aggradation.</i> (11) pers. comm.
Dewater	Removal of water from a streambed or waste product. (1):83 paraphrase
Dewatering	“Condition in stream channel when all the water flow occurs within the permeable streambed sediments, so no surface water is left; common in small streams with considerable accumulations of” bedload. Commonly occurs in severely aggraded channels. (3):Section D quote
Diffusion	“The process whereby particles of liquids, gases, or solids intermingle as the result of their spontaneous movement caused by thermal agitation and in dissolved substances move from a region of higher to one of lower concentration.” (14):318 quote

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Dimictic Lake	A temperature “stratified lake or reservoir that experiences two periods of full mixing or (fall and spring) overturns annually” replenishing the oxygen-poor bottom water. <i>Compare to monomictic lake.</i> (1):84 quote
Discharge	“Volume of water” (or other liquid, e.g., effluent) “flowing past a reference point per unit time (usually expressed as m ³ /s).” (2):715 quote
Distributary	“A diverging stream that does not return to the main stream, but discharges into another stream or ocean.” (1):87 quote
Ditch Block	“A blockage that is located directly downgrade of a cross-drain culvert or cross-ditch and designed to deflect water flow from a ditch into a cross-drain culvert.” (3):Section D quote
Drainage Basin	“Total land area draining to any point in a stream, as measured on a map, aerial photo, or other horizontal, two-dimensional projection.” Also termed catchment area or watershed. <i>See watershed.</i> (2):715 quote
Drift	“To be carried along by currents of air or water.” Often specifically refers to stream invertebrates and organic material transported in water currents. Also used to describe sediments transported by glaciers and deposited directly from the ice or by glacial meltwater. (1):92 quote; (2):715 paraphrase; (15):76 paraphrase
Drought	“Periods of less than average or normal precipitation over a certain period of time sufficiently prolonged to cause a serious hydrological imbalance resulting in biological losses (impact flora and fauna ecosystems) and/or economic losses (affecting man).” (1):94 quote
Drunken Trees	“A group of trees leaning in all directions. Drunken trees can occur on flat permafrost-rich terrain as well as on steep terrain influenced by landslides. Also referred to as jackstrawed trees.” (7):D.3 quote
Dystrophic	“Characterized by having brownish acidic waters, a high concentration of humic matter, and a small plant population. Typically used to describe a lake or pond.” (1):97 quote

E

Effluent	A stream that flows out of another stream or waterbody, or a stream or reach fed by groundwater; also “complex fluid waste material such as sewage or industrial refuse that is released into the environment” (especially into surface waters). <i>See gaining stream.</i> (1):101 paraphrase; (2):716 quote
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Ephemeral Stream	A stream, whose channel is always above the water table, which flows briefly in direct response to precipitation, receiving no continued supply of water from snowmelt or springs. <i>Compare to intermittent stream.</i> (2):716 paraphrase; (8):312 paraphrase
Epilimnion	The upper layer of warm water (above the thermocline) circulated by wind in a thermally stratified lake. (1):108 paraphrase
Erosion	The loosening, dissolution, or wearing away, and subsequent transportation of rock and soil material by natural agents, such as water, wind and ice. (6):300 paraphrase; (7):D.4 paraphrase
Escarpment	“A cliff or steep rock face of great length” formed by fault displacement, erosion, or mass movement. (8):322 quote
Estuary	“Semi-enclosed body of water that has a free connection with the open ocean and within which seawater is measurably diluted with fresh water derived from land drainage.” (2):716,717 quote
Eutrophic	“Rich in dissolved nutrients, photosynthetically productive, and often deficient in oxygen during warm periods.” Although this condition occurs naturally, it can also be induced or accelerated by human activities (e.g., use of fertilizers and inputs of sewage effluent); the process by which this condition develops is <i>eutrophication</i> . <i>Compare to dystrophic and oligotrophic.</i> (2):717 quote
Evaporation	“The physical process by which a liquid (or a solid) is transformed to the gaseous state.” In hydrology, evaporation usually refers to the change in state of water from liquid to gas. <i>Compare to sublimation.</i> (1):111 quote
Evapotranspiration	Loss of water to the atmosphere by the combined processes of surface evaporation (e.g., from soil or vegetation) and transpiration from metabolic use of water by plants. <i>See evaporation, transpiration.</i> (2):717 paraphrase
F	
Fall (Earth, Rock, etc.)	Extremely rapid downward movement of soil or rock material by free fall or rolling off very steep slopes. (7):D.4 paraphrase
Field Capacity	The amount of water held in a volume of soil after the excess water has drained away by gravity. (1):119 paraphrase

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First Order Stream	Headwater streams with no tributaries originating from seepage zones or springs; the most headward channels in the drainage network. <i>See stream order.</i> (3):Section F paraphrase; (4):G-8 paraphrase
Flocculation	Aggregation of suspended inorganic and organic particles through the complex interaction of physical (e.g., shear force), chemical (e.g., electrostatic forces), and biological (e.g., extracellular polymeric substances) processes into composite particles or flocs. (16):1551 paraphrase
Flood	Temporary covering of normally dry land or floodplain with rapidly accumulating surface water from flow that exceeds the bankfull capacity of a stream, channel, or reservoir (e.g., lake or ocean). <i>See annual flood.</i> (1): 122 paraphrase
Floodplain	“A level, low-lying area adjacent to streams that is periodically flooded by stream water. It includes lands at the same elevation as areas with evidence of moving water, such as active or inactive flood channels, recent fluvial soils, sediment on the ground surface or in tree bark, rafted debris, and tree scarring.” (3):Section F quote
Flow Duration Curve	“A cumulative frequency curve that shows the percentage of time that specified discharges are equalled or exceeded.” (1):128,129 quote
Flume	“An open artificial channel or chute carrying a stream of water, as for furnishing power, conveying logs or as a measuring device.” (1):129 quote
Fluvial	“Pertaining to rivers or streams. Fluvial sediments are those deposited by streams.” Also “migrating between main rivers and tributaries.” <i>See alluvial and adfluvial.</i> (2):709 quote; (6):301 quote
Fog Drip	“Water that is collected on the surface of vegetation and falls to the ground, as warm, moist air is advected over the vegetation.” (17):424 quote
Freshet	“High stream flow, usually confined to the stream channel and caused by a regularly recurring hydrological phenomenon (e.g., the snowmelt freshet) (regional term).” (3):Section F quote
Frost Heave	“Ruptured soil, rock, or pavement caused by the expansion of freezing water immediately beneath the surface.” <i>Compare to ground heave.</i> (1):133 quote

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Froude Number “A dimensionless parameter measuring the ratio of the inertia force on an element of fluid to the weight of the fluid element – the inertial force divided by gravitational force.” (18):Fluid mechanics section quote

G

Gaining Stream A stream or reach that receives water from the water table (i.e., groundwater seepage). *See effluent stream.* (1):135 paraphrase

Geomorphology The scientific study of the origin, evolution, and nature of earth surface processes and landforms. (11) pers. comm.

Glaciofluvial “The processes, sediments, and landforms associated with glacial meltwater streams.” (6):301 quote

Glide “A slow-moving, relatively shallow type of run. Calm water flowing smoothly and gently with” moderate velocities “and little or no surface turbulence.” (4):G-3 quote

Graded Stream A stream characterized by a smooth, concave profile, flattening downstream, that appears to exist at a steady-state equilibrium between the rate of sediment transport and the rate of sediment supply (i.e., no net erosion or deposition of material) throughout long reaches. Lithological variations in the streambed that cause features such as waterfalls or cascades may retard or prevent stream gradation for many thousands of years. (8):486–488 paraphrase

Ground Heave The upward movement of the ground usually due to expansion of a sub-soil clay layer when it gets wet. *Compare to frost heave.* (19):“Ask Jeff” section paraphrase

Groundwater Subsurface water in the zone of saturation below the level of the water table, where the hydrostatic pressure is equal to or greater than the atmospheric pressure. (3):Section G paraphrase

H

Headland “A point of land, usually high with a sheer drop, extending out into a body of water.” (1):149 quote

Headwater “The source and upper reaches of a stream; also the upper reaches of a reservoir.” (1):149 quote

Hummocky Hilly, uneven ground surface characteristics. (7):D.5 paraphrase

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Hydric	Sites where water is “removed so slowly that the water table is at or above the soil surface all year; gleyed mineral or organic soils” are present. <i>See hygric, mesic, and xeric.</i> (20):35 quote
Hydrograph	“A graphic representation or plot of changes in the flow of water or in the elevation of water level plotted against time.” (1):156 quote
Hydrologic Budget	“An accounting of all water inflows to, water outflows from, and changes in water storage within a hydrologic unit over a specified period of time.” (1):157 quote
Hydrologic Recovery	Process in a second-growth forest where regeneration restores the hydrology of an area to approximate pre-logging conditions. (21):47 paraphrase
Hydrology	The science that describes and analyzes water, its properties, its circulation, and its distribution over the Earth’s surface in natural and disturbed environments. (1):160 paraphrase; (3):Section H paraphrase
Hydrophilic	Having a strong affinity for water, including the tendency to dissolve in and mix with water. <i>Compare to hydrophobic.</i> (1):160 paraphrase
Hydrophobic	Lacking an affinity for water, including the tendency not to dissolve in or mix with water. <i>Compare to hydrophilic.</i> (1):160 paraphrase
Hydrostatic Pressure	The pressure generated at a given depth within a liquid at rest, a function of the weight of overlying liquid. (2):719 paraphrase; (6):302 paraphrase
Hyetograph	Graph or chart of precipitation intensity versus time. (28) pers. comm.
Hygric	Sites where water is “removed slowly enough to keep the soil wet for most of the growing season, permanent seepage and mottling” and possible weak gleying are present. <i>See hydric, mesic, and xeric.</i> (20):35 quote
Hypolimnion	“Lowermost, non-circulating layer of cold water in a thermally stratified lake, usually deficient in oxygen.” (2):719 quote
Hyporheic Zone	Zone beneath and adjacent to streams where water and dissolved chemicals move easily between surface and groundwater. (1):162 paraphrase; (22):1 paraphrase

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I, J, K

Illuvial	“Describing soil material, usually minerals and colloidal particles, that is removed from the upper soil horizon to a lower soil horizon” and “deposited from suspension or precipitated from solution.” (1):164 quote; (6):302 quote
Incised Channel	A channel cut into the bed of a valley floor through accelerated erosion (degradation) by flowing water of a stream or river. (1):165 paraphrase
Infiltration	“The flow of fluid into a substance through pores or small openings. The word is commonly used to denote the flow of water into the soil.” (1):167 quote
Infiltration Capacity	The maximum rate at which water can enter a soil in a given condition. (1):167 paraphrase
Influent	“Water, wastewater, or other liquid flowing into a reservoir, basin or treatment plant.” Also, a stream or reach that loses water by seepage into the ground. <i>See losing stream.</i> (1):168 quote; (1):192 paraphrase
Interception	“Retention of precipitation on vegetation, from which it is subsequently evaporated without reaching the ground.” Interception is calculated as precipitation minus stemflow and throughfall. (2):720 quote
Intermittent Stream	A stream that flows only part of the year for several weeks in response to seasonal runoff (precipitation and groundwater discharge). <i>Compare to ephemeral stream.</i> (1):171 paraphrase
Isohyet	“A line drawn on a map connecting points that receive equal amounts of precipitation.” (1):176 quote
Karst Topography	Type of landforms created by the dissolution of soluble rocks, such as limestone, gypsum, and dolomite, resulting in underground drainage, depressions, sinkholes, and caves. (1):178 paraphrase
Kinetic Energy	The energy an object has as a result of its motion. (1):178 paraphrase
L	
Lacustrine	The processes, sediments, and landforms associated with lakes. (11) pers. comm.
Laminar Flow	“A flow in which fluid moves smoothly in streamlines of parallel layers or sheets”; non-turbulent flow. (1):182 quote

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Landslide	Sudden mass movement of soil, debris, and rock down a slope under the influence of gravity. (7):D.6 paraphrase
Large Woody Debris	Coarse woody material (conventionally greater than 10 cm in diameter and 1 m long), such as twigs, branches, logs, trees, and roots, that falls into a stream. (4):G-4 paraphrase
Latent Heat of Condensation	The amount of heat energy released to the environment by a unit mass of substance when a gas changes its state to a liquid, without a change in temperature. (1):185 paraphrase
Latent Heat of Vapourization	“The amount of heat absorbed by a unit mass of substance while [changing] from a liquid to a vapour state,” without a change in temperature. (1):185 quote
Lentic	Relating to or living in standing waters such as lakes or ponds. (1):187 paraphrase
Lethal Concentration 50 (LC ₅₀)	“Concentration of toxicant lethal to 50% of test organisms during a defined time period and under defined conditions.” (2):720 quote
Lethal Dose 50 (LD ₅₀)	“Dose of a chemical lethal to 50% of test organisms (rarely used with aquatic organisms because LD ₅₀ indicates the quantity of material injected or ingested).” (2):720 quote
Levee	A natural or human-made earthen bank along the edge of a stream, lake, river, or ocean that restricts flooding. (1):187 paraphrase
Limnology	The scientific study of biological, physical, and geological properties of freshwater bodies. (1):189 paraphrase
Liquefaction	Process by which water-saturated sediment loses strength and becomes a liquid. (1):190 paraphrase
Losing Stream	A stream or reach that loses water by seepage into the ground. Also termed an influent stream. <i>See influent.</i> (1):193 paraphrase
Lotic	Relating to or living in moving water such as streams or rivers. (2):721 paraphrase
Low Flow	“Minimum flow or absence of flow in a stream during the dry season.” (23):5 quote
Lysimeter	“An artificial device for evaluating the water budget by enclosing a block of soil, often on a scale, with equipment for monitoring inputs and outputs.” <i>See snowmelt lysimeter.</i> (17):424 quote

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M, N, O

Macroinvertebrate	“An animal without a backbone that is large enough to see without magnification” ... “(e.g., most aquatic insects, snails, and amphipods).” (1):193 quote; (2):721 quote
Macrophyte	Plants large enough to see without magnification, usually in reference to aquatic plants. (2):721 paraphrase
Macropore	“Pore too large to hold water by capillary action.” (2):721 quote
Main Stem	The principal channel of a drainage system, excluding any tributaries. (2):721 paraphrase
Manning’s <i>n</i>	“Empirical coefficient for computing stream bottom roughness,” or the “irregularity of streambed materials as they contribute to resistance to flow,” which is often “used to determine water velocity in stream discharge calculations.” (2):721 quote; (4):G-6 quote
Mass Wasting	“The slow or rapid gravitational movement of large masses of earth material” including creep, debris flows, and landslides, also termed mass movement. (6):303 quote, paraphrase
Mean Annual Precipitation	The average annual precipitation (rain and water equivalent of snow) derived from all known precipitation values, or an estimated equivalent value derived using methods such as regional indices or isohyetal maps. (1):196 paraphrase
Meander	“A sinuous channel form in flatter river grades formed by the erosion on one side of the channel (pools) and deposition on the other side (point bars).” <i>See sinuosity.</i> (1):197 quote
Meandering Stream	“A clearly defined channel characterized by a regular and repeated pattern of bends” formed by continued erosion on one side of the channel and deposition on the other. (15):46 quote
Mesic	Sites where water is “removed somewhat slowly in relation to supply; soil may remain moist for a significant, but sometimes short period of the year. Available soil moisture reflects climatic inputs.” <i>See hydric, hygric, and xeric.</i> (20):35 quote
Monomictic Lake	“Lakes or reservoirs which are relatively deep, do not freeze over during the winter, and undergo a single stratification and mixing cycle during the year (usually in the fall).” <i>Compare to dimictic lake.</i> (1):206 quote

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Moraine	A heterogeneous mixture of rock and soil transported and deposited by a glacier. Moraines appear as hill or ridges marking original glacial limits. (8):710,711 paraphrase
Nephelometric Turbidity Unit (NTU)	“Measure of the concentration or size of suspended particles (cloudiness) based on the scattering of light transmitted or reflected by the medium.” See <i>turbidity</i> . (2):722 quote
Nival	Pertaining to snow. (11) pers. comm.
Off Channel	“Bodies of water adjacent to the main channel that have surface water connections to the main river channel at summer discharge levels.” (24):26 quote
Oligotrophic	Pertaining to a lake or other body of water that is relatively low in nutrients and photosynthetic productivity, and rich in dissolved oxygen at all depths. See <i>dystrophic and eutrophic</i> . (2):723 paraphrase
Outflow Channel	“A natural stream channel that transports reservoir releases.” (1):228 quote
P, Q	
Peak Flow	“Greatest stream discharge recorded over a specified period of time, usually a year but often a season” or even a single event (as in storm peak flows). (2):724 quote
Percolation	The movement of water through the pores or spaces of a rock or soil. (1):236 paraphrase
Perennial Stream	Stream that flows all year round, regardless of weather conditions. (8):952 paraphrase
Periphyton	Assemblage of micro-organisms (e.g., algae, fungi, bacteria, protozoa) firmly attached to submerged surfaces in a stream or other water body. (1):237 paraphrase
Permafrost	The thermal condition, irrespective of the state of moisture present, of any soil or rock layer where temperatures persist “below 0°C for at least two consecutive winters” without thawing in the summer. “In B.C., permafrost is commonly found in peatlands and on north-facing slopes.” (7):D.7 quote; (8):833 paraphrase
Permeability	A measure of the ability of soil, sediments, and rock to transmit fluids, that depends on substrate composition, compaction, and porosity. (2):724 paraphrase

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Phreatic	“Of or relating to groundwater.” (1):240 quote
Phreatic Zone	Subsurface zone having higher water pressure than atmospheric levels. <i>See vadose zone.</i> (12) pers. comm.
Phreatophyte	“A water-loving plant, one that thrives in wet sites and/or has the ability to” send roots to the saturated zone to use groundwater. (1):240 quote, paraphrase
Planar Slide	A type of landslide movement or surface failure that “takes place on a well defined inclined plane.” (7):D.8 quote
Pluvial	Pertaining to rain; “Formed or caused by the action of rain, as a pluvial deposit” or pluvial lake. Associated with the Quaternary geological period. (1):243 quote; (8):873 paraphrase
Pool	A portion of an active stream channel with reduced current velocity, typically characterized by deeper water than surrounding areas, or “a small body of standing water.” (4):G-5 paraphrase, quote
Pool–Riffle Ratio	“The ratio of the surface area or length of pools to the surface area or length of riffles in a given stream reach.” (4):G-6 quote
Porosity	“The property of containing openings or interstices. In rock or soil, it is the ratio (usually expressed as a percentage) of the volume of openings in the material to the bulk volume of the material. With respect to water, porosity is a measure of the water-bearing capacity of a formation. However, with respect to water extraction and movement, it is not just the total magnitude of porosity that is important, but the size of the voids and the extent to which they are interconnected, as the pores in a formation may be open, or interconnected, or closed and isolated.” (1):246 quote
Precipitation	Water that falls to the Earth’s surface “from the atmosphere as rain, snow, hail, or sleet” following condensation due to cooling of the air below the dew point, “measured as liquid-water equivalent regardless of the form in which it falls.” (7):D.8 quote; (1):248 paraphrase

R

Rainfall Intensity– Duration Curve	A curve showing the relationship between rainfall depth (or rate) and storm duration in a given area. (1):260 paraphrase
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Rain-on-Snow Event	Rainstorms that result in large streamflows due to the combined effects of heavy rainfall and snowmelt runoff. “Rapid snowmelt is caused by heat supplied from the warm air that is characteristic of intense rainstorms and by heat released during condensation of moisture from the air onto the snow surface.” (3):Section R paraphrase, quote
Rating Curve	A curve on a graph showing the relation between the discharge of a stream and stage at a given gauge station. (1):262 paraphrase
Rational Method	A mathematical formula used to estimate “peak runoff rates from data on rainfall intensity and drainage basin characteristics.” $Q = 0.278 \cdot CIA$, where Q is the peak runoff rate (m^3/s), C is the rational runoff coefficient, I is the rainfall intensity (mm/hr), and A is the drainage area (km^2). (26):298,299 quote, paraphrase
Reach	A relatively homogeneous segment of a stream channel, lake, or inlet “characterized by uniform channel pattern, gradient, substrate, and channel confinement.” (4):G-8 paraphrase, quote
Redd	“Nest made in gravel, consisting of a depression hydraulically dug by a fish for egg deposition (and then filled) and associated gravel mounds.” (2):725 quote
Restoration	The return of an ecosystem or habitat back to its original community structure, species diversity, and natural functions. (3):Section R paraphrase
Retrogression	“A characteristic of a landslide, in which the upper portion of the landslide continues to fail resulting in the top of the landslide moving up slope.” (7):D.9 quote
Return Flow	“Infiltrated water which returns to the land surface after having flowed for some distance in the subsurface.” (29):Appendix 8 quote
Return Period	The time to the recurrence of a hydrological event, from statistical analysis of hydrologic data, based on the assumption that observations are equally spaced in time. A return period of 100 years means that, on average, an event of this magnitude or greater is not expected to occur more often than once in 100 years. It is calculated as the inverse of the probability of occurrence ($R=1/p$). (1):273 paraphrase; (7):D.9 paraphrase
Revetment	A facing of material used to armour a bank to protect it from erosion. <i>See riprap</i> . (4):G-6 paraphrase

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Reynold's Number	A dimensionless number representing the ratio of inertial and viscous forces, used to characterize the level of turbulence in fluid flow in a pipe or duct, or around an obstacle. (1):274 paraphrase
Riffle	A shallow section of a stream or river characterized by rapid current and a surface broken by completely or partially submerged obstructions such as gravel or boulders. (2):726 paraphrase; (4):G-6 paraphrase
Riparian (Area)	“An area of land adjacent to a stream, river, lake or wetland that contains vegetation that, due to the presence of water, is distinctly different from the vegetation of adjacent upland areas.” The riparian area is influenced by and influences the adjacent body of water. (3):Section R quote; (4):G-6 paraphrase
Riprap	A layer of large, durable material such as coarse rock used to protect exposed surfaces and slopes susceptible to erosion such as fills and streambanks. <i>See revetment.</i> (2):726 paraphrase
Road Deactivation	“Measures taken to stabilize roads and logging trails during periods of inactivity, including the control of drainage, the removal of sidecast where necessary, and the re-establishment of vegetation for permanent deactivation.” (3):Section R quote
Rotational Failure	A mass movement that occurs “on a well defined, curved shear surface,” ... “producing a backward rotation in the displaced mass.” (7):D.9 quote
Run	An area of a stream or river characterized by fast moving water without surface agitation, where the water surface is approximately parallel to the overall gradient of the stream reach. Also, a group of fish migrating in a river that may comprise one of many stocks. (2):726 paraphrase; (4):G-6 paraphrase
Runoff	“The portion of the precipitation that moves from the land to surface water bodies” either as surface or subsurface flow. (1):279 quote, paraphrase
S	
Salmonid	“Refers to a member of the fish family ... <i>Salmonidae</i> , including the salmons, trouts, chars, whitefishes and grayling.” (4):G-6 quote
Saltation	“Particle movement in water or wind where particles skip or bounce along the streambed or soil surface.” (1):282 quote

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Saturated Flow	“The liquid flow of water in soils that occurs when the soil pores in the wettest part of the soil are completely filled with water and the direction of flow is from the wettest zone of higher potential to one of lower potential.” (1):284 quote
Saturation Zone	The part of the soil or rock in which all pore spaces are filled with water, includes the capillary zone. <i>See unsaturated zone.</i> (1):284 paraphrase
Scarp	<i>See escarpment.</i>
Secchi Disk	“Black and white disk lowered into the water to measure water transparency; an average is taken of the depth at which the disk disappears when lowered and reappears when raised.” “Its primary use is in the study of lakes.” (1):288 quote; (2):727 quote
Sediment Budget	An accounting of the erosion, storage, and transport processes of soil and sediment in drainage basins or smaller landscape units. (11) pers. comm.
Sedimentation	“Deposition of material suspended in water or air, usually when the velocity of the transporting medium drops below the level at which the material can be supported.” (2):727 quote
Settlement Pond	A basin with low water velocity that enables “suspended sediment to settle before the flow is discharged into a creek.” (3):Section S quote
Shear Stress	Stress caused by forces operating parallel to one another but in opposite directions. (11) pers. comm.
Sheet Erosion	“The removal of thin layers of surface material more or less evenly from an extensive area of gently sloping land, by broad continuous sheets of running water rather than by streams flowing in well-defined channels.” (7):D.10 quote
Sinuosity	“The ratio of channel length between two points on a channel to the straight line distance between those same two points.” (4):G-7 quote
Sinuuous	Characterized by a serpentine or winding form, typically referring to stream channels. <i>See meander.</i> (11) pers. comm.
Slide	“A mass movement process in which slope failure occurs along one or more slip surfaces and in which the unit generally disintegrates into a jumbled mass en route to its depositional site. A debris flow or torrent flow may occur if enough water is present in the mass.” <i>See debris flow.</i> (3):Section S quote

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Slump	“A mass movement process in which slope failure occurs on a usually curved slip surface and the unit moves downslope as an intact block, frequently rotating outward. Slumps appear as discrete block movements, often in place, whereas slides usually break up and travel downslope.” (3):Section S quote
Snow Density	“The ratio of the volume of meltwater derived from a sample of snow and the initial volume of the sample”, in mass of snow per unit volume. (1):301 quote
Snow Water Equivalent (SWE)	The depth of water, usually expressed in millimetres, that would result from melting a given depth of snow. A function of the snow density. (11) pers. comm.
Snowline	“The general altitude to which the continuous snow cover of high mountains retreats in summer,” controlled by the depth of the winter snowpack and summer temperatures. Can also be used to identify the general altitude of the continuous snow cover at any one point in time. (1):301 quote; (1):302 paraphrase
Snowmelt Lysimeter	An instrument used to “collect and measure the melt water that is released from the snow pack” during the snowmelt season. <i>See lysimeter.</i> (27):29 quote
Solifluction	“The slow downslope viscous flow of water saturated soil and other unsorted surficial material.” (7):D.10 quote
Specific Conductance	“A measure of the ability of water to conduct electrical current... related to the type and concentration of ions in solution and can be used for approximating the total dissolved solids (TDS) content of water ... used in groundwater monitoring as an indication of the presence of ions of chemical substances that may have been released ... by waste storage.” (1):308,309 quote
Spume	“Foam or froth on a liquid.” (1):311 quote
Stage	The height of the water surface of a river or lake above an arbitrarily established zero point. (14):1131 paraphrase
Stem Flow	Precipitation temporarily intercepted by vegetative surfaces that eventually runs to the ground down the trunks or stems of plants. (2):728 paraphrase
Stream Density	<i>See channel density.</i>

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Stream Order	“A scale-dependent property of drainage networks that describes the position and approximate size of a stream segment in the network. First order streams are headwater streams that have no tributaries. A second order stream is formed where two first order streams join, a third order stream is formed where two second order streams join, etc. Note that the confluence of a second order stream with a first order stream remains a second order stream.” <i>See first order stream.</i> (4):G-8 quote
Streamflow	The discharge of water from a surface stream course. (1):319 paraphrase
Sublimation	The process of a solid transforming directly into gaseous form without going through the intermediate liquid stage. <i>Compare to evaporation.</i> (6):306 paraphrase
Substrate	The basic surface on which material adheres, typically mineral and (or) organic material that forms the bed of a stream. (4):G-8 paraphrase
Surge	A sudden forceful flow like that of a wave or series of waves. (14):1172 paraphrase
Suspended Sediment	The part of a stream’s (or other waterbody’s) total sediment load that is carried in the water column due to turbulence, currents, or colloidal suspension. (1):326 paraphrase
T	
Talus	“Rock fragments of any size and shape, usually coarse and angular, derived from and lying at the base of a very steep, rocky slope.” (7):D.11 quote
Terracettes	“A series of very long and narrow terraces” or lines of steps in soil and grass, that are often discontinuous and “run parallel to the contour of the slope.” “Usually produced by very local surficial slumping” on moderate to steep slopes in cool, humid climates. (7):D.11 quote; (8):1143–1145 paraphrase
Terrain	A region of the earth’s surface considered as a physical feature, which can be described by relief, roughness, and surface material. (8):1145 paraphrase
Terrain Stability	“Slope stability from a regional perspective as opposed to the study of the stability of an individual slope.” (7):D.11 quote
Thalweg	Line of deepest water in a stream channel as seen from above. Normally associated with the zone of greatest velocity in the stream. If there is no stream, it is the line of lowest points of a valley. (8):1149 paraphrase

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Throughfall	Precipitation that falls through the vegetative cover and eventually reaches the ground. Indirect throughfall is intercepted by foliage but eventually drips and falls to the ground, while direct throughfall through canopy gaps is not intercepted. <i>See interception.</i> (11, 12) pers. comm.
Time of Concentration	“The time required for water to flow from the farthest point on the watershed to” an identified point in the stream. (1):334 quote
Toe	“The break in slope at the bottom of a stream bank where the bank meets the bed”; or the line of a cut or fill slope where it intersects the ground or roadbed. (1):335 quote, paraphrase
Topple	In B.C., a type of mass “movement that involves the forward rotation of a mass of soil or rock about a central point below the displaced mass.” (7):D.11 quote
Total Dissolved Solids (TDS)	“A measure of the amount of material dissolved in water (mostly inorganic salts).” One use is to determine the quality of drinking water. (1):336 quote, paraphrase
Total Hardness	The total dissolved salts in water, expressed as the equivalent concentration of calcium carbonate. Primarily due, but not limited, to calcium and magnesium in solution. (5):Section T paraphrase
Total Maximum Daily Load (TMDL)	“The maximum quantity of a particular water pollutant that can be discharged into a body of water without violating a water quality standard.” (1):337 quote
Total Suspended Solids (TSS)	The total amount of filterable solids found in waste or natural waters. (1):337 paraphrase
Transpiration	“Passage of water vapour and other gases from a living body through membranes or pores; usually used to mean loss of water from leaves and other plant surfaces.” (2):730 quote
Tributary	A stream that flows into another, usually larger, stream or body of water. (2):730 paraphrase
Trim Line	“A line along the stream or river channel below which evidence of erosion by water and/or by a debris flow is readily apparent by the erosion of soil and rock and/or by the removal of vegetation, including moss.” (7):D.11 quote

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Turbidity An optical measure of the reduced transparency of water due to suspended material, which causes incident light to be scattered, reflected, and attenuated. *See nephelometric turbidity unit.* (1):346 paraphrase

U, V, W

Unsaturated Zone The subsurface zone in the soil between the water table and the soil surface where the pores contain both air and water, not including the capillary zone. Also termed the zone of aeration. *See saturation zone.* (1):349 paraphrase

Vadose Zone “The zone between the land surface and the water table ... The pore spaces contain water at less than atmospheric pressure, as well as air and other gases. Saturated bodies, such as perched groundwater, may also exist in the vadose zone.” *See phreatic zone.* (30):560 quote

Variable Source Area Saturated zone, adjacent to a stream channel, which varies in size seasonally and during individual storm events, and contributes runoff to the channel during a runoff-producing event. (11) pers. comm.

Water Balance An accounting of the balance between the amount of water entering (inputs) and the amount of water leaving a system (outputs), at the watershed level. (1):358 paraphrase

Water Cycle The cyclic process of water travelling in a sequence from the air (condensation) to the earth (precipitation) and returning to the atmosphere (evaporation). (1):359 paraphrase

Water Quality The physical, chemical, and biological properties of water related to a particular use. (1):364 paraphrase

Water Table “The level in the ground below which all pore spaces are saturated with water.” The surface along which water pressure equals atmospheric pressure. (6):307 quote

Water Yield The volume of water produced by all or part of a drainage basin through either surface channels or subsurface flow for a defined period of time. (1):370 paraphrase; (5):Section W paraphrase

Waterbar A shallow channel or raised barrier, laid diagonally across the surface of a road to guide water off the road, preventing “excessive flow down the road surface and” subsequent “erosion of road surface materials.” (2):731 paraphrase; (3):Section W quote

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Watershed	Also referred to as a drainage basin or catchment area. “Watersheds are the natural landscape units from which hierarchical drainage networks are formed.” Watershed boundaries typically are the height of “land dividing two areas that are drained by different river systems.” (1):367 quote; (4):G-8 quote
Watershed Assessment	A process for evaluating the cumulative impacts, over time and space, of all land-use activities within a given watershed on variables such as streamflows, sediment regime, riparian health, and landscape and stream channel stability. The process can also be used to assess the potential impacts of proposed future land use activities. (11) pers. comm.
Weir	“Notch or depression in a dam or other water barrier through which the flow of water is measured or regulated. Also, a barrier constructed across a stream to divert fish into a trap or to raise the water level or divert water flow.” (2):731 quote
Wetted Perimeter	“The length of the wetted contact between a stream of flowing water and its containing conduit or channel, measured in a plane at right angles to the direction of flow.” (1):378 quote

X, Y, Z

Xeric	Site where “water is removed very rapidly in relation to supply; soil is moist for brief periods following precipitation.” <i>See hydric, hygric, and mesic.</i> (20):35 quote
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