Appendix A: Glossary of Selected Terms

Glossary of Selected Terms

Acid Rain: Rainfall with a pH of less than 7.0. Long-term deposition of these acids is linked to adverse effects on aquatic organisms and plant life in areas with poor neutralizing (buffering) capacity.

Adfluvial: Possessing a life history trait of migrating between lakes or rivers and streams.

Alevin: The developmental life stage of young salmonids and trout that are between the egg and fry stage. The alevin has not absorbed its yolk sac and has not emerged from the spawning gravels.

Algal Bloom: Excessive growth of algae that depletes water of oxygen. Usually caused by excess nutrients in a body of water.

Ambient (Water Quality): Existing conditions of air, water, and other media at a particular time.

Anadromous: A species that spends a portion of its life cycle in fresh water, and a portion in salt water.

Appropriation Doctrine: In western states, the water rights are based on the principle of prior-appropriation, or "first in time, first in right." This means that older claims take precedence over newer ones and the first person to obtain a water right ion a stream is the last to be shut off in times of low stream flows.

Attentuation: Flood levels lowered by water storage in wetlands, lakes or reservoirs.

Bank armouring: Reinforcing the banks of a creek or lining a stream channel with impervious material such as retaining walls, riprap or gabions.

Bankfull Width: Stage or elevation at which water overflows the natural banks of streams and begins to flood the upland, also known as the 2-year event level.

Bioaccumulate: The retention and concentration of a substance by an organism. Aquatic vegetation can also bioaccumulate chemicals.

Benthic Zone: The bottom surfaces of aquatic environments.

Biochemical Oxygen Demand (BOD): The dissolved oxygen required to decompose organic matter in water. It is a measure of pollution, since heavy waste loads have a high oxygen demand.

Bioengineering: Restoration efforts primarily aimed at stabilizing waterway banks through the use of mostly natural materials such as ground covers, burlap or coconut fiber blankets, closely planted and densely rooted trees, or low-growing hardy native species; placement of tree trunks, larger rocks or small constructed flow-diverting structures at critical erosion-prone locations; velocity dissipaters or meanders in the waterway bed.

Biomagnification: The serial accumulation of a substance (e.g., a chemical) by organisms in the food chain, with higher concentrations of the substance in each succeeding level.

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.
Channel Morphology: Shape of the stream channel.

Channelized: The process of changing and straightening the natural path of a waterway.

Chlorinated Hydrocarbons: Halogenated hydrocarbons in which the halogen in the molecular structure is chlorine, such as pesticides.

Cobble: Substrate particles that are smaller than boulders and are generally 64-256 mm in diameter. Can be further classified as small and large cobble. Cobble is commonly used by salmon in the construction of the redd.

Conductivity: A measure of the ability of material to conduct an electrical charge. It is a broad measure of pollution. The more polluted streams are, the higher the conductivity values.

Cottid: A marine or freshwater fish of the family Cottidae, with a large flattened head and prominent spines.

Dendritic pattern: A pattern characterized by formations that look like tree branches.

Detention facilities: A structure or place that temporarily holds water to lessen flooding impacts downstream and allow enough time for sediments in the water to settle out. Can include stormwater ponds, wetlands and floodplains.

Dieldrin: An insecticide that was widely used form the 1950s to the 1970s. It was used in agriculture for soil and seed treatment and in public health to control disease vectors such as mosquitoes.

Diurnal: Recurring every day; having a daily cycle.

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.

Drainage basin: An area from which surface runoff is carried away by a single drainage system; also called catchment area, watershed or drainage area.
E. coli: The *Escheria coli* bacterium is an indicator of human or animal feces.

Effluent: (1) Something that flows out, especially a stream flowing out of a body of water. (2) (Water Quality) Discharged wastewater such as the treated wastes from municipal sewage plants, brine wastewater from desalting operations, and coolant waters from a nuclear power plant.

Electrofishing: A method for estimating fish populations. Fish are stunned by electrical current, netted before they recover, and released after species and length data are collected.

Emulsion: A liquid dispersed in, though not always mixed with, another liquid; suspension.

Endangered Species Act (ESA): A 1973 Act of Congress mandating that endangered and threatened species of fish, wildlife, and plants be protected and restored.

Essential salmonid habitat: The habitat necessary to prevent the depletion of native salmon species during their life history stages of spawning and rearing.

Estuarine: Area where freshwater of a river or wetland meets and mixes with saltwater of the ocean.
Estuary: A coastal body of water that is semi-enclosed, openly connected with the ocean, and mixes with freshwater drainage from land.

Evaporation: To expel moisture from.

Fecal Coliform Bacteria: Bacteria group used as an indicator of human or animal feces.

Flashy: A flow of water in streams which is intense and of short duration.

Flush Grab Sample: A sample taken either during or just after a "first-flush" storm event. Typically, it is the most polluted portion of the discharge, because it contains pollutants lying on the surface of the drainage area and accumulating over a long period of time.

Fluvial: Fish that rear in larger rivers and spawn in smaller tributaries.

Fry: A stage of development in young salmon or trout. During this stage the fish is usually less than one year old, has absorbed its yolk sac, is rearing in the stream, and is between the alevin and parr stage of development.

Groundwater: Water beneath the earth's surface that fills in and flows through spaces in rocks and soil.

Hilsenhoff Biotic Index (HBI): An index of a taxon's sensitivity to organic enrichment that typically occurs as a result of excessive nutrients.

Hydric soil: A soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic (no oxygen) conditions in the upper levels of soil.

Hydrocarbons: Compounds found in fossil fuels that contain carbon and hydrogen in various combinations. They are major pollutants and some may be carcinogenic. Fossils fuels, glues, paints, and solvents contain hydrocarbons. Most people use the terms "hydrocarbon" and "volatile organic compounds" as synonyms.

Hydrologic Cycle: The cyclical movement of water from the ocean to the atmosphere, by evaporation through rain to the earth's surface, through runoff and groundwater to streams and back to sea.

Hydrologic regime: Properties, distribution and interaction of water or liquid on the surface of land or underlying soil.

Hydrophobic Organic Compounds: Organic compounds that don't dissolve in water.

Hydrophyte: Any plant growing in water or soil that is at least periodically deficient in oxygen as a result of excess water. Hydrophyte can also mean plants typically found in wetland habitats.
Impacted stream: Stream classification for sub-watersheds with 11% to 25% impervious cover due to urbanization. It leads to permanent degradation of stream quality.

Impervious surface: Surface (such as pavement) that does not allow, or greatly decreases, the infiltration of precipitation into the ground.

Impoundment: A pond, lake, basin or other space, either natural or constructed, for storage, regulation, and control of water.

Industrial Effluent: Industrial waste material discharged into the environment, either treated or untreated.

Infiltration: The rate at which a given volume of water can move into the soil surface.

Kjeldahl Nitrogen: A measurement of the amount of free ammonia and organic nitrogen in a substance.

Macroinvertebrate: An organism that lacks a backbone and is large enough to be seen with the naked eye; an important source of food for fish.

Marine: Of or relating to the sea.

Metamorphosis: The resurgence of development in an animal larva that transforms it into a sexually mature adult.

Micro-Climate: The climate in a localized area. For example, the climate produced under a forest canopy in a riparian area in the Willamette Valley will be different than the climate in an open field in the same area, due to different types of vegetation present in each locality. The plant diversity and vegetative structure will influence temperature, moisture retention, humidity and other factors in a localized area**.**

Natal stream: Stream of birth.

National Pollutant Discharge Elimination System (NPDES): Established by Section 402 of the Clean Water Act, this federally-mandated system is used for regulating point source pollution and stormwater discharge.

Non-point Source Pollution: Pollution that does not originate from a clear or discrete source. Variable and dispersed pollution sources from agriculture, silviculture, mining, construction, waste disposal and pollution from urban-industrial areas.

Non-supporting Stream: Stream classification for sub-watersheds with more than 25% total impervious cover. These streams are not candidates for restoration.

Nutrient Load: The amount of phosphorus and nitrogen entering a stream. High nutrient loads can cause excessive algal growth, which in turn leads to lower dissolved oxygen levels.

Outfall: The mouth or outlet of a river, stream, lake, drain or sewer.

Overland flow: Water from precipitation that moves over the ground surface (i.e., surface runoff).

Oxbow: A U-shaped bend in a river that sometimes becomes an isolated lake/wetland due to changes in the main river channel.

Parr: The developmental life stage of salmon and trout between alevin and smolt, when the young are actively feeding in fresh water.

Peak discharge: The maximum flow in a stream during a flood event.

Perched water body: Layer of saturated soil separated from the main water table by an impermeable geologic barrier.

Perennial creek: Stream that flows year-round.

Persistent emergents: Plants such as cattails that last past maturity and remaining standing upright even though the plant material is dead.

Phenol: A compound derived from benzene and used in resins, disinfectants, plastics and pharmaceuticals.

Phthalates: Chemicals derived from naphthalene that are used in the synthesis of dyes, perfumes and medicines or in the manufacture of plasticizers, insecticides and resins.

Point Source: (1) A stationary or clearly identifiable source of a large individual water or air pollution emission, generally of an industrial nature. (2) Any discernible, confined, or discrete conveyance from which pollutants are or may be discharged, including (but not limited to) pipes, ditches, channels, tunnels, conduits, wells, containers, rolling stock, concentrated animal feeding operations, or vessels. Point source is also legally and more precisely defined in federal regulations. Contrast with Non-point Source (NPS) Pollution.

Point Source Pollution: Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels, and containers of various types. See Non-point Source (NPS) Pollution.

Point of diversion (POD): A location, surface or ground, where water is diverted (i.e., pump station, well, reservoir) for use by the water right-holder under the terms of his water right.

Place of Use (POU): Areas, usually fields, where water is applied under the terms of the water right. Therefore, they are represented by polygons on the map. The polygons can overlap one another, as in the case of one water right being supplemental to another water right for the same area of land.

Precipitation: Water from the atmosphere that reaches plants, the ground or water bodies.

Predation: Hunting and killing another animal for food.

Redd: A nest of fish eggs covered with gravel.

Resident fish: Non-migratory fish that remain in the same stream network their entire lives.

Riffle: Shallow section of stream or river with rapid current and a surface broken by gravel, rubble, or boulders.

Riparian (Riparian cover/vegetation): Land immediately adjacent to water, usually streams or rivers, which is subject to occasional flooding. Also, plants that grow in the wetland area, such as a river, stream, reservoir, pond, spring, marsh, bog or meadow.

Riprap: Stones or other energy-absorbing material used to stabilize a road bank, stream bank, or stream channel.

Permeability: The amount of water that can be absorbed by the soil over time.

Precipitation: Water from the atmosphere that reaches plants, the ground, or water bodies. Depending on local weather conditions, precipitation may be deposited in many forms, including rain, snow, sleet, hail, and condensation (e.g., dew or frost).

Rock Weir: An enclosure made of rocks and set in a stream to capture fish.

Salmonid: Fish of the family Salmonidae, including salmon, trout, char, whitefish, ciscoes and grayling. Generally, the term refers mostly to salmon, trout, char and steelhead.

Sculpin: A marine or freshwater fish of the family Cottidae, with a large flattened head and prominent spines.

Sedge: A grass-like herb with inconspicuous flowers and three-sided, solid stems.

Seining: A fish survey technique using large nets to catch fish, which are measured, identified and released.

Sensitive stream: Stream classification for sub-watershed with less than 10% impervious cover, and which is still capable of supporting stable channels and good biodiversity.

Sensitive Taxa: The number of taxa identified that are known to be very sensitive to stream disturbance.

Sheet Flow: The flow of rainwater over the land surface toward stream channels.

Smolt: The salmonid or trout developmental life stage between parr and adult, when the juvenile is at least one year old and has adapted to the marine environment.

Stream reach: A section of stream possessing similar physical features such as gradient, flow and confinement.

Stormwater Outfall: The mouth of a sewer, drain or conduit where effluent is discharged into receiving waters.

Substrate: The composition of a streambed, including mineral or organic materials.

Surface Water: The water of ponds, lakes, rivers and streams.

Suspended Sediment: Particles floating in a fluid by the upward motion of turbulent currents, moving ice, or wind. Most suspended sediments come from accelerated erosion of agricultural land, logging operations (especially where clear-cutting is practiced), surface mines and construction sites.

Swale: A low tract of marsh-like land.

Taxa: Plural of taxon. A group classified together in a scientific naming system.

Taxa Richness: The total number of invertebrate taxa identified from a sample.

Taxonomy: The branch of biology concerned with naming and classifying the life forms based on their natural relationships

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Terrestrial: Of or relating to the earth or its inhabitants. Typically refers to habitat that is not aquatic.

Thalweg: (1) The lowest part of a valley or stream channel. (2) A subsurface, groundwater stream percolating beneath and in the general direction of a surface stream or valley. (3) The middle, chief, or deepest part of a navigable channel or waterway.

Time-Based Composite Sample: Multiple samples collected at different times and combined to achieve one large "composite" sample. This is done to get a representative sample of water over a period of time, to account for changes in its constituents.

Total Maximum Daily Loads (TMDLs): The maximum amount of point and non-point source pollution a stream can take in during a single day and still support its designated uses. Designated uses include things such as fish habitat, recreation and drinking water.

Total Suspended Solids (TSS): A measure of how much sediment a stream is carrying in the water. Suspended solids consist of inorganic (silts and clays) and organic (algae, zooplankton, bacteria and detritus) matter carried along by water as it runs off the land. There is usually a higher concentration of inorganic matter. Both contribute to turbidity, or cloudiness, of the water.

Turbidity: Turbid waters contain suspended matter that interferes with the passage of light so that visual depth is restricted.

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Understory: The plant community that grows under the canopy of trees in a forest.

Vertical Complexity: The different layers of vegetation in a forest that results from the diversity of plant species and age classes.

Volatile Solids (TVS): Those solids that vaporize at a temperature of 550 degrees Celsius. Volatile solids are usually considered to be organic. Their presence can be used to estimate the organic/inorganic ratio of the solids.

Water column: The upper limit of the soil or underlying rock material that is wholly saturated with water.

Water Pollution Control Facilities (WPCF): State requirement for the discharge of wastewater to the ground only. Permits are issued for land irrigation of wastewater, wastewater lagoons, on-site disposal systems, and underground injection control systems (e.g., dry wells and sumps). The primary purpose of the WPCF permit is to prevent discharges to surface waters and to protect groundwater from contamination.

Weir (dam): A dam in a river raise the water level for diversions such as a mill race, forming a fishpond, or the like.

Wetland: those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soil conditions.

Zooplankton: Small aquatic animals suspended or suspended or swimming in water.