APPENDIX A-1:

GLOSSARY

The following glossary has been prepared for Chapters One and Two, with particular attention to the temperature TMDL. Other terms are generally defined in the body of the text.

A

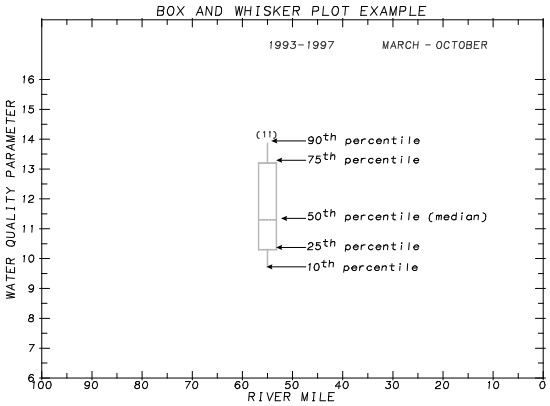
Abatement -- Reducing the degree or intensity of, or eliminating, pollution.
Abiota -- Those non-living factors which are present in and affect the characteristics of a given ecosystem.
Ablation -- The process by which ice and snow waste away as a result of melting and/or evaporation.
Acclimate -- The adaptation of an organism to environmental changes.
Acclimation pond -- Concrete or earthen pond or a temporary structure used for rearing and imprinting juvenile fish in the water of a particular stream before their release into that stream.
Acidic -- The condition of water or soil that contains a sufficient amount of acid substances to lower the pH below 7.0.
Acre -- A measure of area equal to 43,560 square feet (4,046.87 square meters). One square mile equals 640 acres.
Acre-foot (af) -- The volume of water that will cover one acre to a depth of 1 foot.
Active Bank Erosion: Estimates from observation of the active stream bank erosion as a percentage (%) of the total reach length.
Adaptation -- Changes in an organism's structure or habits that allow it to adjust to its surroundings.
Adaptive management -- The process of implementing policy decisions as scientifically driven management experiments that test predictions and assumptions in management plans, and using the resulting information to improve the plans.
Adaptive management areas -- Landscape units designated for development and testing of technical and social approaches to achieving desired ecological, economic, and other social objectives.
Adult equivalent population -- The number of fish that would have returned to the mouth of the Columbia River in the absence of any prior harvest.
Adult Fish Counts -- A fish-viewing window is at the upstream end of most fish ladders. Observers count the number of fish, by species and size, passing the window for 50 minutes of every hour for 16 hours per day. Extrapolations are made for the hours and minutes not counted to provide an estimate of daily adult fish passage for each dam. In general, separate counts are made for adults and jacks (precocious males that can be identified by their smaller size).
Adult Fish Ladders -- The main-stem hydroelectric dams on the Columbia and lower Snake Rivers have fish ladders that allow adults to pass the dams on their upstream spawning migration.
Aeration -- Any active or passive process by which intimate contact between air and liquid is assured, generally by spraying liquid in the air, bubbling air through water, or mechanical agitation of the liquid to promote surface absorption of air.
Aerobic -- Characterizing organisms able to live only in the presence of air or free oxygen, and conditions that exist only in the presence of air or free oxygen. Contrast with Anaerobic.
Affluent (Stream) -- A stream or river that flows into a larger one; a Tributary.
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.
Allocation – Refers to the load allocation (nonpoint sources) and wasteload allocation (point sources). Specifically, an allocation is the division of the loading capacity between nonpoint and point sources of pollution.
Alluvial -- Deposited by running water.
Alluvium -- Sediment or loose material 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.
Anadromous -- Fish that hatch rear in fresh water, migrate to the ocean (salt water) to grow and mature, and migrate back to fresh water to spawn and reproduce.
Analytical watershed -- For planning purposes, a drainage Basin subdivision used for analyzing cumulative impacts on resources.
Anerobic -- Characterizing organisms able to live and grow only where there is no air or free oxygen, and conditions that exist only in the absence of air or free oxygen.
Anthropogenic Sources of Pollution: Pollutant deliver to a water body that is directly related to humans or human activities.
Appropriate -- To authorize the use of a quantity of water to an individual requesting it.
Aquaduct -- A pipe or conduit made for bringing water from a source.
Aquaduct -- A pipe or conduit made for bringing water from a source.
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.
Aquifer -- An underground layer of rock or soil containing ground water.
At-risk fish stocks -- Stocks of anadromous salmon and trout that have been identified by professional societies, fish management agencies, and in the scientific literature as being in need of special management consideration because of low or declining populations.
Augmentation (of stream flow) -- Increasing steam flow under normal conditions, by releasing storage water from reservoirs.
Autotrophs: Organisms that obtain energy from sunlight and their materials from non-living sources. In streams, autotrophs include periphyton, phytoplankton, and macrophytes.

B

Backbar channel -- A channel formed behind a bar connected to the main channel but usually at a higher bed elevation than the main channel. Backbar channels may or may not contain flowing or standing water.
Backwater -- (1) A small, generally shallow body of water attached to the main channel, with little or no current of its own.
Backwater pool -- A pool that formed from an eddy along a channel margin as a result of an upstream obstruction like a large tree, rootwad, or boulder.
Bank stability -- The properties of a stream bank that counteract erosion, for example, soil type, and vegetation cover.
Bank Building Event: A hydrologic event (usually high flow condition) that deposits sediments and organic debris in the flood plain and along stream banks.
Bankfull width -- The width of a river or stream channel between the highest banks on either side of a stream.
Bar (stream or river bar) -- An accumulation of alluvium(gravel or sand) caused by a decrease in water velocity.
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 effected by human activity or regulation.
Bed load -- Sediment that moves near the streambed.
Bed Material -- The sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.
Beneficial Use: Legislatively approved use of water for the best interest of people, wildlife and aquatic species.
Benthos -- All the plant and animals living on or closely associated with the bottom of a body of water.
Biomass -- The total quantity (at any given time) of living organisms of one or more species per unit of space (species biomass), or of all the species in a biotic community (community biomass).
Blocked areas -- Areas in the Columbia River Basin where hydroelectric projects have created permanent barriers to anadromous fish runs. These include the areas above Chief Joseph and Grand Coulee dams, the Hells Canyon Complex and other smaller locations.
Blowdown -- Trees felled by high winds.
Board feet (BF) -- Lumber or timber management term. The amount of wood contained in an unfinished board 1 inch think, 12 inches long, and 12 inches wide.
Bog -- Freshwater wetlands that are poorly drained and characterized by a buildup of peat.
Bottleneck -- A sharp reduction of a breeding population's size to a few individuals. The genetic consequences of a bottleneck, especially the loss of genetic variability, depend on both its magnitude and its duration.
Boulder -- A large substrate particle that is larger that cobble, >256 mm in diameter.

Box and Whisker Plots: Water quality parameters and instream physical parameters are reviewed below using box and whisker plots for illustration. Below is an example of a box and whisker plot:



Example of box and whisker plot.

The box plots have river mile on the X-axis with the water quality parameter on the Y-axis. The box represents the data at the sampling sites, from upstream to downstream. Each box represents a summary of the data:

The upper corner of each box is the 75th percentile (75 percent of the data are below that concentration), and the lower corner is the 25th percentile (25 percent of the data are below that concentration). The upper and lower tails are the 90th and 10th percentiles, respectively. Points above and below the tails represent data higher and lower than the 90th and 10th percentiles. The dashed line in the box is the median concentration for that site (half of the data fall above and below that concentration).

Brackish -- Having a somewhat salty taste, especially from containing a mixture of seawater and fresh water.

Braided stream -- A complex tangle of converging and diverging stream channels (Anabranches) separated by sand bars or islands. Characteristic of flood plains where the amount of debris is large in relation to the discharge.

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

Brook -- A natural stream of water, smaller than a river or creek; especially a small stream or rivulet which breaks directly out of the ground, as from a spring or seep; also, a stream or torrent of similar size, produced by copious rainfall, melting snow and ice, etc.; a primary stream not formed by tributaries, though often fed below its source, as by rills or runlets; one of the smallest branches or ultimate ramifications of a drainage system.

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.

Buoyancy -- The tendency of a body to float or rise when submerged in a fluid.

Bypass system -- A channel or conduit in a dam that provides a route for fish to move through or around the dam without going through the turbine units.

Bypass Systems -- Juvenile salmonid bypass systems consist of moving screens lowered into turbine intakes to divert fish away from turbines at hydroelectric dams. Fish move into a channel that transports them safely around the dam. Bypassed fish are then typically returned directly to the river below the dam, although some Columbia River Basin dams have facilities to load bypassed fish into barges or trucks for transport to a release site downstream from all the dams. PIT-tag detectors interrogate all PIT-tagged fish passing through the bypass system. In addition, the systems are equipped with subsampling capabilities that allow hands-on enumeration and examination of a portion of the collection for coded-wire tags (CWT), brands, species composition, injuries, etc. Recovery information at bypass systems is used to develop survival estimates, travel time estimates, and run timing; to identify problem areas within the bypass system; and as the basis for flow management decisions during the juvenile migrations.

C

Canal -- A constructed open channel for transporting water.

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. Leavs, branches and vegetation that are above ground and/or water that provide shade and cover for fish and wildlife.

Canopy closure -- The degree to which the canopy (forest layers above one's head) blocks sunlight or obscures the sky.

Captive brood stock -- Fish raised and spawned in captivity.

Carrying capacity -- The maximum number of organisms that a certain habitat can sustain over the long term.

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.
Ceremonial or Subsistence harvest -- Harvests of fish by Native Americans for ceremonies and to support traditional lifestyles.
Channel -- An area that contains continuously or periodically flowing water that is confined by banks and a stream bed.
Channelization -- The process of changing and straightening the natural path of a waterway.
Channel Complexity: Implied high pool frequency of pools and large woody debris (instream roughness).
Channel Simplification: The loss (absence) of pools and large woody debris that is important for creating and maintaining channel features such as: substrate, stream banks and pool:riffle ratios.
Check dam -- A small dam constructed in a gully or other small water course to decrease the streamflow velocity, minimize channel erosion, promote deposition of sediment and to divert water from a channel.
Classic old growth -- Forest stands with unusually old and large trees that also meet criteria for old-growth forest.
Clay -- Substrate particles that are smaller than silt and generally less than 0.004 mm in diameter.
Clean Water Act: Established in 1977, is an amendment to the 1972 Federal Water Pollution Control Act which set the groundwork for regulating pollutant discharges into U.S. waters. The Clean Water Act makes discharging pollutants from a point source to navigable waters illegal without a permit. The Clean Water Act amendments of 1977 were aimed at toxic pollutants. In 1987, the Clean Water Act was reauthorized and focused on sewage treatment plants, toxic pollutants, and authorized citizen suit provisions. The Clean Water Act allows the EPA to delegate administrative and enforcement aspects of the law to the state agencies. In states with this EPA given authority of Clean Water Act implementation, the EPA still plays the role of supervisor.
Clear-cut -- A harvest in which all or almost all of the trees are removed in one cutting.
Clear-cut harvest -- A timber harvest method in which all trees are removed in a single entry from a designated are, with the exception of wildlife trees or snags, to create an even-aged stand.
Climax -- The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition.
Co-managers -- Federal, state, county, local, and tribal agencies that cooperatively manage salmonids in the Pacific Northwest.
Coarse woody debris (CWD) -- Portion of a tree that has falled or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter.
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. Commonly used by salmon in the construction of a redd.
Coefficient of determination (r-squared) -- The percentage of variation of the independent variable (y) that is attributed to its linear regression in the dependent variable (x).
Collection and bypass system -- A system at a dam that collects and holds the fish approaching the dam for later transportation or moves them through or around the dam without going through the turbine units.
Colonization -- The establishment of a species in an area not currently occupied by that species. Colonization often involves dispersal across an area of unsuitable habitat.
Columbia Basin fish and wildlife authority -- Represents regional state and federal fish agencies and the Columbia Basin Indian Tribes.
Columbia River Inter-Tribal Fish Commission -- The Commission is the coordinating body of the Yakima, Nez Perce, Umatilla and Warm Springs Indian tribes. These tribes all signed the 1855 treaties that reserved their rights to Columbia River salmon and steelhead, certain wildlife and other resources.
Columbia River System -- The Columbia River and its tributaries.
Columbia River Treaty -- The treaty between the United States and Canada for the joint development of the Columbia River. It became effective on September 16, 1964.
Commercial forest land -- Land declared suitable for producing timber crops and not withdrawn from timber production for other reasons.
Commercial thinning -- The removal of generally merchantable trees from an even-ages stand, usually to encourage growth of the remaining trees.
Commercial tree species -- Conifer species used to calculate the commercial forest land allowable sale quantity. They are typically utilized as saw timber and include species such as Douglas-fir, hemlock, spruce, fir, pine, and cedar.
Commodity resources -- Goods or products of economic use or value.
Compensation -- Management activities that replace all or part of fish stocks or their habitat lost through development or other activities.
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.
Conifer -- A tree belonging to the order Gymnospermae, comprising a wide range of trees that are mostly evergreens. Conifers bear cones (hence, coniferous) and needle-shaped or scalelike leaves.

Coniferous -- Pertaining to Conifers, which bear woody cones containing naked seeds.
Conservation -- The process or means of achieving recovery of viable populations.
Conservation area -- Designated land where conservation strategies are applied for the purpose of attaining a viable plant or animal population.
Conservation recommendations -- Suggestions by the Fish and Wildlife Service or National Marine Fisheries Service in biological opinions regarding discretionary measures to minimize or avoid adverse effects on a proposed action of federally listed threatened or endangered species or designated critical habitat.
Conservation strategy -- A management plan for a species, group of species, or ecosystem that prescribes standards and guidelines that if implemented provide a high likelihood that the species, groups of species, or ecosystem, with its full complement of species and processes, will continue to exist well-distributed throughout a planning area, i.e., a viable population.
Contaminate -- To make impure or unclean by contact or mixture.
Contiguous habitat -- Habitat suitable to support the life needs of species that is distributed continuously or nearly continuously across the landscape.
Core area -- The area of habitat essential in the breeding, nesting and rearing of young, up to the point of dispersal of the young.
Corps of Engineers (U.S. Army) -- An agency with the responsibility for design, construction and operation of civil works, including multipurpose dams and navigation projects.
Correlation Coefficient (R): Used to determine the relationship between two data sets. R-values vary between –1 and 1, where "–1" represents a perfectly inverse correlation relationship and "1" represents a perfect correlation relationship. A "0" R-value indicates that no correlation exists:

$$R = \frac{1}{n} \cdot \sum_{i=1}^{n} (x_i - \mu_x) \cdot (y_i - \mu_y)$$

Corridor -- A defined tract of land, usually linear, through which a species must travel to reach habitat suitable for reproduction and other life-sustaining needs.
Cover -- Vegetation used by wildlife for protection from predators, or to mitigate weather conditions, or to reproduce. May also refer to the protection of the soil and the shading provided to herbs and forbs by vegetation.
Critical habitat -- Under the Endangered Species Act, critical habitat is defined as (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protections; and (2) specific areas outside the geographic area occupied by a listed species, when it is determined that such areas are essential for the conservation of the species.
Critical stock -- A stock of fish experiencing production levels that are so low that permanent damage to the stock is likely or has already occurred.
Crown -- The upper part of a tree or other woody plant that carries the main system of branches and the foliage.
Crown cover -- The degree to which the crowns of trees are nearing general contact with one another.
Crucial habitat -- Habitat that is basic to maintaining viable populations of fish and wildlife during certain seasons of the year or specific reproduction periods.
Cubic feet per second (Cfs) -- A unit used to measure water flow. One cfs is equal to 449 gallons per minute.
Culvert -- A buried pipe that allows streams, rivers, or runoff to pass under a road.
Cull -- A tree or snag that does not meet merchantable specifications.
Cultured stock -- A stock that depends upon spawning, incubation, hatching, or rearing in a hatchery or other artificial production facility.
Culvert -- A buried pipe that allows streams, rivers, or runoff to pass under a road.
Cumulative Effects -- The combined environmental impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects.

D

Dam -- A concrete or earthen barrier constructed across a river and designed to control water flow or create a reservoir.
Debris flow -- A rapid moving mass of rock fragments, soil, and mud, with more that half of the particles being larger that 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 streambed.
Deciduous -- Trees and plants that shed their leaves at the end of the growing season.
Deciduous Plant -- (Botanical) (1) Plants characterized by a specific growth and dormancy cycle, with certain parts falling at the end of the growing period, as leaves, fruits, etc., or after anthesis, as the petals of many flowers. (2) Plants having leaves of this type. As contrasted with Evergreen which remains verdant throughout the year.
Decommission: The removal of a road to improve hillslope drainage and stabilize slope hazards.
Decomposer -- Any of various organisms (as many bacteria and fungi) that feed on and break down organic substances (such as dead plants and animals).

Decomposition -- The breakdown of matter by bacteria and fungi, changing the chemical makeup and physical appearance of materials.
Deflector screens/diversion screens -- Wire mesh screens placed at the point where water is diverted from a stream or river. The screens keep fish from entering the diversion channel or pipe.
Demand -- The rate at which electric energy is used, whether at a given instant, or averaged over any designated period of time.
Demography -- The study of characteristics of human populations, especially size, density, growth, distribution, migration and vital statistics and the effect of these on social and economic conditions.
Depressed stock -- A stock of fish whose production is below expected levels based on available habitat and natural variations in survival levels, but above the level where permanent damage to the stock is likely.
Detritus -- Undissolved organic and inorganic matter, such as small pieces of vegetation, and animal remains, that result from decomposition and help form the base of the food chain.
Determinate Coefficient (R^2): The R^2 value represents "goodness of fit" for a linear regression. An R^2 value of "1" would indicate that all of the data variability is accounted for by the regression line. Natural systems exhibit a high degree of variability; R^2 values approaching "1" are uncommon. A value of "0" would indicate that none of the data variability is explained by the regression.
Dewatering -- Elimination of water from a lake, river, stream, reservoir, or containment.
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.
Dip-net fishery -- A traditional tribal fishery for salmon and steelhead where fish are captured using long-handled dip nets, usually at waterfalls or other obstructions, which congregate the fish and make them more vulnerable to harvest.
Discharge -- Volume of water released from a dam or powerhouse at a given time, usually expressed in cubic feet per second.
Dissolved gas concentrations -- The amount of chemicals normally occurring as gases, such as nitrogen and oxygen, that are held in solution in water, expressed in units such as milligrams of the gas per liter of liquid. Supersaturation occurs when these solutions exceed the saturation level of the water (beyond 100 percent).
Dissolved Oxygen (DO) -- The amount of free (not chemically combined) oxygen dissolved in water, wastewater, or other liquid, usually expressed in milligrams per liter, parts per million, or percent of saturation.
Distribution (of a species) -- The spatial arrangement of a species within its range.
Disturbance -- A force that causes significant change in structure and/or composition through natural events such as fire, flood, wind, or earthquake, mortality caused by insect or disease outbreaks, or by human-caused events, e.g., the harvest of forest products.
Ditch -- A long narrow trench or furrow dug in the ground, as for irrigation, drainage, or a boundary line.
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.
Diversion Dam -- A barrier built to divert part or all of the water from a stream into a different course.
Down log -- Portion of a tree that has fallen or been cut and left in the woods.
Draft -- Release of water from a storage reservoir.
Drainage -- An area (Basin) mostly bounded by ridges or other similar topographic features, encompassing part, most, or all of a watershed and enclosing some 5,000 acres.
Drainage area -- See watershed.
Drawdown -- The release of water from a reservoir for power generation, flood control, irrigation or other water management activity.
Dredging -- Digging up and removing material from wetlands or waterways, usually to make them deeper or wider.
Drought -- Generally, the term is applied to 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). In a less precise sense, it can also signify nature's failure to fulfill the water wants and needs of man.
Dry Wash -- A streambed that carries water only during and immediately following rainstorms.
Duff layer -- The layer of loosely compacted debris underlying the litter layer on the forest floor.

E

Early seral stage forest -- Stage of forest development that includes seedling, sapling, and pole-sized trees.
Earthfill or Earth Dam -- An embankment dam in which more than 50 percent of the total volume is formed of compacted fine-grained material obtained from a borrow area (i.e., excavation pit).

East-side forest -- The 12 National Forests in Washington, Oregon, and California that lie partly or wholly east of the Cascade Mountain Range crest: Colville, Deschutes, Fremont, Klamath, Malheur, Ochoco, Okanogan, Shasta-Trinity, Umatilla, Wallowa-Whitman, Wenatchee, and Winema National Forest.
Ecological Health -- The state of an ecosystem in which processes and functions are adequate to maintain diversity of biotic communities commensurate with those initially found there.
Ecological interaction -- The sum total of impacts of one species on another species, or on other members of the same species.
Ecologically significant -- Species, stands, and forests considered important to maintain the structure, function, and processes of particular ecosystems.
Ecosystem -- The biological community considered together with the land and water that make up its environment. Or a unit comprising interacting organisms considered together with their environment.
Ecosystem diversity -- The variety of species and ecological processes that occur in different physical settings.
Ecosystem management -- A strategy or plan to manage ecosystems to provide for all associated organisms, as opposed to a strategy or plan for managing individual species.
Eddy -- A circular current of water, usually resulting from an obstruction.
Edge -- Where plant communities meet or where successional stages or vegetative conditions with plant communities come together.
Edge effect -- "The drastically modified environmental conditions along the margins, or ""edges,"" of forest patches surrounded partially or entirely by harvested lands."
Effective old-growth forest -- Old-growth forest largely unmodified by external environmental influences from nearby, younger forest stands.
Effluent -- (1) Something that flows out or forth, 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.
Egg-to-smolt survival -- The numerical difference between the number of fertilized eggs produced by a groups of fish and the number of smolts resulting from those eggs.
Elevation -- Height in feet above sea level.
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.
Embankment Dam -- A dam structure constructed of fill material, usually earth or rock, placed with sloping sides and usually with a length greater than its height.
Embeddedness -- The degree to which dirt is mixed in with spawning gravel.
Embryo -- The early stages of development before an organism becomes self supporting.
Emergence -- The process during which fry leave their gravel spawning nest and enter the water column.
Emigration -- Referring to the movement of organisms out of an area. See immigration and migrating.
Empirical -- (Statistics) Based on experience or observations, as opposed to theory or conjecture.
Endangered species -- Any species of plant of animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion or its range, and published in the Federal Register.
Endangered Species Act (ESA) -- A 1973 Act of Congress that mandated that endangered and threatened species of fish, wildlife, and plants be protected and restored.
Endemic -- Native to or limited to a specific region.
Energy -- The ability to work (i.e., exert a force over distance). Energy is measured in calories, joules, KWH, BTUs, MW-hours, and average MWs.
Energy content curves (ECC) -- A set of curves that establishes limits on the amount of reservoir draw-down permitted to produce energy in excess of FELCC.
Enhancement -- Emphasis on improving the value of particular aspects of water and related land resources.
Entrainment -- (Streams) The incidental trapping of fish and other aquatic organisms in the water, for example, used for cooling electrical power plants or in waters being diverted for irrigation or similar purposes.
Ephemeral Streams -- Streams which flow only in direct response to precipitation and whose channel is at all times above the water table.
Epilimnion -- The upper region of a thermally stratified lake, above the thermocline, and generally warm and well oxygenated.
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.
ESA -- The U.S. Endangered Species Act.
Escapement (Spawning) -- The portion of a fish population that survives sources of natural mortality and harvest to reach its natal spawning grounds.
Estuary -- A coastal body of water that is semi-enclosed, openly connected with the ocean, and mixes with freshwater drainage from land.
ESU -- "Evolutionarily Significant Unit; a ""distinct"" population of Pacific salmon, and hence a species, under the Endangered Species Act."
Eutrophic -- Usually refers to a nutrient-enriched, highly productive body of water.

Eutrophication -- The process of enrichment of water bodies by nutrients.
Evaporation -- The physical process by which a liquid (or a solid) is transformed to the gaseous state. In Hydrology, evaporation is vaporization that takes place at a temperature below the boiling point.
Evolutionarily significant unit (ESU) -- "A definition of ""species"" used by NMFS in administering the Endangered Species Act. An ESU is a population (or groups of populations) that (1) is reproductively isolated from other conspecific population units, and (2) represents an important component in the evolutionary legacy of the species."
Exotic species -- Introduced species not native to the place where they are found (e.g., Atlantic salmon to Oregon or Washington).
Extinct species -- A species that no longer exists.
Extinction -- The natural or human induced process by which a species, subspecies or population ceases to exist.

F

Fall-run fish -- Anadromous fish that return to spawn in the fall.
Fauna -- (1) A term used to describe the animal species of a specific region or time. (2) All animal life associated with a given habitat, country, area, or period.
Fecundity -- The total number of eggs produced by a female fish.
Federal Energy Regulatory Commission (FERC) -- The Commission issues and regulates licenses for construction and operation of non federal hydroelectric projects and advises federal agencies on the merits of proposed federal multipurpose water development projects.
Federal land managers -- This category includes the Bureau of Indian Affairs; the Bureau of Land Management; the National Park Service, all part of the U.S. Department of the Interior; and the Forest Service, U.S. Department of Agriculture.
Federal project operators and regulators -- Federal agencies that operate or regulate hydroelectric projects in the Columbia River Basin. They include the Bonneville Power Administration, the Bureau of Indian Affairs, the Bureau of Reclamation, the Corps of Engineers and the Federal Energy Regulatory Commission.
Fill -- (Geology) Any sediment deposited by any agent such as water so as to fill or partly fill a channel, valley, sink, or other depression.
Fill Dam -- Any dam constructed of excavated natural materials or of industrial waste materials.
Fine Sediment: Sand, silt and organic material that have a grain size of 6.4 mm or less.
Fingerling -- Refers to a young fish in its first or second year of life.
Fish flows -- "Artificially increased flows in the river system called for in the fish and wildlife program to quickly move the young fish down the river during their spring migration period. (See ""water budget."")"
Fire Regime: The frequency, extent, intensity and severity of naturally occurring seasonal fires in an ecosystem.
Firm energy -- the amount of energy that can be generated given the region's worst historical water conditions. It is energy produced on a guaranteed basis.
Fish and wildlife agencies -- This category includes the Fish and Wildlife Service, U.S. Department of the Interior; the Idaho Department of Fish and Game; the Montana Department of Fish, Wildlife and Parks; the National Marine Fisheries Service, U.S. Department of Commerce; the Oregon Department of Fish and Wildlife; and the Washington Department of Fish and Wildlife.
Fish flows -- "Artificially increased flows in the river system called for in the fish and wildlife program to quickly move the young fish down the river during their spring migration period. (See ""water budget."")"
Fish guidance efficiency (FGE) -- The proportion of juvenile fish passing into the turbine intakes that are diverted away from the turbines and into bypass facilities.
Fish ladder -- See Fishway.
Fish Passage Center -- Part of the water budget program, the center plans and implements the annual smolt monitoring program; develops and implements flow and spill requests; and monitors and analyzes research results to assist in implementing the water budget. (See water budget.)
Fish passage efficiency (FPE) -- The proportion of juvenile fish passing a project through the spillway, sluiceway, or juvenile bypass system, as opposed to passing through the turbines.
Fish passage facilities -- Features of a dam that enable fish to move around, through, or over without harm. Generally an upstream fish ladder or a downstream bypass system.
Fish passage managers -- Located at the Fish Passage Center, the two fish passage managers are responsible for the specific planning, implementation and monitoring activities of the Center aimed at helping fish on their migratory routes in the Columbia River Basin. One manager is designated by a majority of the federal and state fish and wildlife agencies, and the other manager is designated by a majority of the Columbia River Basin Indian tribes. (See Fish Passage Center.)
Fish screen -- A screen across the turbine intake of a dam, designed to divert the fish into the bypass system.
Fishery -- The act, process, or occupation of attempting to catch fish, which may be retained or released.
Fishway -- A device made up of a series of stepped pools, similar to a staircase, that enables adult fish to migrate up the river past dams.

Fitness -- The relative ability of an individual (or population) to survive and reproduce (pass on it's genes to the next generation) in a given environment.

Fixed drawdown period -- The late summer and fall when the volume of the next spring runoff is not yet known, and reservoir operations are guided by fixed rule curve based on historical streamflow patterns.

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. It is often the result of heavy rainfall in a localized area.

FLIR Thermal Imagery: Forward looking infrared radiometer thermal imagery is a direct measure of the longer wavelengths emitted by all bodies. The process by which bodies emit longwave radiation is described by the Stefan-Boltzmann 4th Order Radiation Law. FLIR monitoring produces spatially continuous stream and stream bank temperature information. Accuracy is limited to 0.5^{o}C. FLIR thermal imagery often displays heating processes as they are occurring and is particularly good at displaying the thermal impacts of shade, channel morphology and groundwater mixing.

Flood Plain: Strips of land (of varying widths) bordering streams that become inundated with floodwaters. Land outside of the stream channel that is inside a perimeter of the maximum probable flood. A flood plain is built of sediment carried by the stream and deposited in the slower (slack waters) currents beyond the influence of the swiftest currents. Flood plains are termed “living” if it experiences inundation in times of high water. A “fossil” flood plain is one that is beyond the reach of the highest current floodwaters.

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

Flood Plain Roughness: Reflects the ability of the flood plain to dissipate erosive flow energy during high flow events that over-top streams banks and inundate the flood plain.

Flora -- (1) A term used to describe the entire plant species of a specified region or time. (2) The sum total of the kinds of plants in an area at one time. All plant life associated with a given habitat, country, area, or period. Bacteria are considered flora.

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

Flow augmentation -- Increased flow from release of water from storage dams.

Flume -- (1) A narrow gorge, usually with a stream flowing through it. (2) An open artificial channel or chute carrying a stream of water, as for furnishing power, conveying logs, or as a measuring device.

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

Food chain -- Organisms that are interrelated in their feeding habits, each feeding upon organisms that are lower in the chain and in turn being fed on by organisms higher in the chain.

Forage Fish -- Small fish which breed prolifically and serve as food for predatory fish.

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.

Forebay -- The part of a dam's reservoir that is immediately upstream from the powerhouse.

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

Forest fragmentation -- The change in the forest landscape, from extensive and continuous forests of old-growth to mosaic of younger stand conditions.

Forest land -- Land that is now, or is capable of becoming, at least 10 percent stocked with forest trees and that has not been developed for nontimber use.

Forest landscape -- Land presently forested or formerly forested and not currently developed for nonforest use.

Fragmentation -- The process of reducing size and connectivity of stands that compose a forest.

Freshet -- A rapid temporary increase in stream flow due to heavy rains or snow melt.

Freshwater marsh -- Open wetlands that occur along rivers and lakes.

Freshwater swamp -- Forested or shrubby wetlands.

Fry -- A stage of development in young salmon or trout. During this stage the fry 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.

Full pool -- The maximum level of a reservoir under its established normal operating range.

G

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

Gaging station -- A particular site in a stream, lake, reservoir, etc., where hydrologic data are obtained.

Gallery -- "(1) A passageway within the body of a dam or abutment; hence the terms ""grouting gallery,"" ""inspection gallery,"" and ""drainage gallery."" (2) A long and rather narrow hall; hence the following terms for a power plant: ""valve gallery,"" ""transformer gallery,"" and ""busbar gallery."""

Gallons per minute (Gpm) -- A unit used to measure water flow.

Gap Analysis -- A method for determining spatial relationships between areas of high biological diversity and the boundaries of National Parks, National Wildlife Refuges (NWR), and other preserves.

Gas Supersaturation -- The overabundance of gases in turbulent water, such as at the base of a dam spillway. Can cause fatal condition in fish similar to the bends.
Generation -- Act or process of producing electric energy from other forms of energy. Also refers to the amount of electric energy so produced.
Generator -- A machine that changes water power, steam power, or other kinds of mechanical energy into electricity.
Genetic conservation -- The preservation of genetic resources in breeding populations.
Genetic conservation refuge -- Reserve area whose goal is to protect genetic diversity and natural evolutionary processes within and among natural populations, while allowing varying degrees of exploitation and modification.
Genetic integrity -- The ability of a breeding population or group of breeding populations to remain adapted to its natural environment.
Genetic introgression -- The entry or introduction of a gene from one gene complex into another, as in introgressive hybridization, which is the spread of genes of one species into the gene complex of another as a result of hybridization between numerically dissimilar populations in which extensive backcrossing prevents formation of a single stable population.
Genetic risk -- The probability of an action or inaction having a negative impact of the genetic character of a population or species.
Genetics -- The study of genes and gene pools.
Genotype -- The complement of genes in an individual. Or the entire genetic constitution of an organism.
Geographic information system (GIS) -- A computer system capable of storing and manipulating spatial (i.e., mapped) data.
Gill-net fishery -- Any fishery where the gear is limited to the use of gill nets only. A gill net is designed to catch a fish by allowing it to insert its head into a net mesh far enough that the mesh will slip over the gill flaps or opercles. When this happens the fish is gilled or becomes trapped.
Glide -- A section of stream that has little or no turbulence.
Gradient -- Vertical drop per unit of horizontal distance.
Grass/Forb -- An early forest successional stage where grasses and forbs are the dominant vegetation.
Gravel -- See cobble.
Gravity Dam -- A dam constructed of concrete and/or masonry that relies on its weight for stability.
Gravity feed system -- A system that provides flow in a channel or conduit through the use of gravity.
Gray Water -- Waste water from a household or small commercial establishment which specifically excludes water from a toilet, kitchen sink, dishwasher, or water used for washing diapers.
Groundwater -- Subsurface water and underground streams that can be collected with wells, or that flow naturally to the earth's surface though springs.
Guideline -- Administrative constraints applicalbe in developing a plan and criteria directing the actions taken to achieve objectives.

H

Habitat -- The local environment in which a organism normally lives and grows.
Habitat conservation plan (HCP) -- An agreement between the Secretary of the Interior and either a private entity or a state that specifies conservation measures that will be implemented in exchange for a permit that would allow taking of a threatened or endangered species.
Habitat diversity -- The number of different types of habitat within a given area.
Habitat fragmentation -- The breaking up of habitat into discrete islands through modification or conversion of habitat by management activities.
Harvest -- Fish that are caught and retained in a fishery (consumptive harvest).
Hatchery -- Refers to facilities that incubate eggs and rear the young for release into streams and rivers.
Hatchery production -- The spawning, incubation, hatching, or rearing of fish in a hatchery or other artificial production facility.
Hatchery stock -- A stock that depends upon spawning, incubation, hatching, or rearing in a hatchery or other artificial production facility.
Hazardous materials -- Anything that poses a substantive present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
Headgate -- The gate that controls water flow into irrigation canals and ditches. A watermaster regulates the headgates during water distribution and posts headgate notices declaring official regulations.
Headwater -- Referring to the source of a stream or river
Headworks -- A flow control structure on an irrigation canal.
Healthy stock -- A stock of fish experiencing production levels consistent with its available habitat and within the natural variations in survival for the stock.
Heavy metals -- Metallic elements with high atomic weights, e.g., mercury, chromium, cadmium, arsenic, and lead. They can damage living things at low concentrations and tend to accumulate in the food chain.
Herbaceous -- Vegetation or parts of plants with little or no woody tissue.

Homing -- The ability of a salmon or steelhead to correctly identify and return to their natal stream, following maturation at sea.
Hydraulic head -- The vertical distance between the surface of the reservoir and the surface of the river immediately downstream from the dam.
Hydric -- Wet.
Hydroelectricity (Hydroelectric power) -- The production of electric power through use of the gravitational force of falling water.
Hydrologic unit -- A distinct watershed or river Basin defined by an 8-digit code.
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.
Hydropower system -- The hydroelectric dams on the Columbia River and its tributaries.
Hypolimnion -- The lower zone of a thermally stratified lake, below the thermocline, and usually depleted in oxygen during summer stagnation.
Hyporheic zone -- The area under the stream channel and floodplain that contributes to the stream.

I

Impact -- A spatial or temporal change in the environment caused by human activity.
Impoundment -- A body of water formed behind a dam.
In-lieu energy -- Energy provided by a reservoir owner instead of water to which a downstream party is entitled.
Impaired waterbody: Any waterbody of the United States that does not attain water quality standards (designated uses, numeric and narrative criteria and antidegradation requirements defined at 40 CFR 131), due to an individual pollutant, multiple pollutants, pollution, or an unknown cause of impairment.
In-situ -- In place. An in-situ environmental measurement is one that is taken in the filed, without removal of a sample to the laboratory.
Incidental take -- """Take"" of a threatened or endangered species that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."
Incipient Lethal Limit: Temperature levels that cause breakdown of physiological regulation of vital bodily processes, namely: respiration and circulation.
Incised River -- A river which cuts its channel through the bed of the valley floor, as opposed to one flowing on a floodplain; its channel formed by the process of degradation.
Indicator (Organism) -- (Water Quality) An organism, species, or community that shows the presence of certain environmental conditions.
Indicator Species: Used for development of Oregon's water temperature standard as sensitive species that if water temperatures are reduced to protective levels will protect all other aquatic species.
Indigenous -- Existing naturally in a region, state, country, etc.
Infiltration (soil) -- The movement of water through the soil surface into the soil.
Inflow -- Water that flows into a reservoir or forebay during a specified period.
Instantaneous flows -- The velocity of a volume of water.
Instantaneous Lethal Limit: Temperature levels where denaturing of bodily enzymes occurs.
Instantaneous Rate Of Mortality -- The natural logarithm (with sign changed) of the survival rate. The ratio of number of deaths per unit of time to population abundance during that time, if all deceased fish were to be immediately replaced so that population does not change. Also called; *coefficient of decrease.
Instream cover -- The layers of vegetation, like trees, shrubs, and overhanging vegetation, that are in the stream or immediately adjacent to the wetted channel.
Instream Roughness: Refers to the substrate (both organic and inorganic) that is found in the stream bank.
Instream flow work group -- An interagency group that simulated the effects of various fish flow regimes by using hydropower regulation computer models. The group was composed of technical experts and water resource managers from the fish and wildlife agencies, federal dam operators and regulators, and state water management agencies.
Instream flows -- See flows.
Intake -- The entrance to a turbine at a dam, diversion works, or pumping station.
Interim (short-term) solution -- Actions to be taken in a 2- to 4-year period.
Intermittent Flow: Stream flow that ceases seasonally, at least once a year.
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.
Invertebrate drift -- Stream and terrestrial invertebrates that float with the current.
Irrigation diversion -- Generally, a ditch or channel that deflects water from a stream channel for irrigation purposes.
Island model of migration -- An equilibrium model of gene flow and genetic drift that is applied under the assumption that a species (or operational taxonomic unit or ESU) is subdivided into populations of equal size, all of which exchange migrants at a constant rate, with migrants coming with equal probability from all other populations.

Isolate -- A population that is isolated.
Isolation -- Absence of genetic crossing among populations because of distance or geographic barriers.
Issue -- A matter of controversy or dispute over resource management activities that is well defined or topically discrete.

J

Jeopardy -- A finding made through consultation under the Endangered Species Act that the action of a federal agency is likely to jeopardize the continued existence of a threatened or endangered species.
Juvenile -- Fish from one year of age until sexual maturity.
Juvenile transportation -- Collecting migrating juvenile fish and transporting them around the dams using barges or trucks.

K

Kelt -- A spent or spawned out steelhead salmon.
Key watershed -- As defined by National Forest and Bureau of Land Management District fish biologists, a watershed containing (1) habitat for potentially threatened species or stocks of anadromous salmonids or other potentially threatened fish, or (2) greater than 6 square miles with high-quality water and fish habitat.
Kilowatt (KW) -- The electrical unit of power which equals 1,000 watts or 1.341 horsepower.
Kilowatt-hour (kWh) -- A basic unit of electrical energy that equals one kilowatt of power applied for one hour.

L

Landing -- Any place on or adjacent to the logging site where logs are assembled for further transport.
Landscape -- A heterogenous land area with interacting ecosystems that are repeated in similar form throughout.
Landscape diversity -- The size, shape, and connectivity of different ecosystems across a large area.
Landscape features -- The land and water form vegetation, and structures that compose the characteristic landscape.
Landslide -- A movement of earth down a steep slope.
Large woody debris -- Pieces of wood larger than 10 feet long and 6 inches in diameter, in a stream channel.
Langley: A unit of solar radiation equivalent to one gram calorie per square centimeter of irradiated surface.
Late seral state forest -- Stage in forest development that includes mature and old-growth forest.
Leave strips -- Generally narrow bands of forest trees that are left along streams and rivers to buffer aquatic habitats from upslope forest management activities.
Legacy Condition: Past land management and historical disturbance affect the conditions that are currently observed in a stream channel. Present conditions may reflect chronic or episodic events that no longer occur.
Lentic -- Characterizing aquatic communities found in standing water.
Levee -- An embankment constructed to prevent a river from overflowing (flooding).
Limiting factor -- "A requirement such a food, cover or spawning gravel that is in shortest supply with respect to all resources necessary to sustain life and thus ""limits"" the size or retards production of a fish population."
Limnetic -- Referring to a standing water Ecosystem (ponds or lakes).
Limnology -- The study of lakes, ponds and streams.
Litter layer -- The loose, relatively undecomposed organic debris on the surface of the forest floor made up typically of leaves, bark, small branches, and other fallen material.
Littoral zone -- The region of land bordering a body of water.
Load Allocation (LA): A term referred to in the Clean Water Act that refers to the portion of the receiving waters loading capacity attributed to either to one of its existing or future non-point sources of pollution or to natural background sources.
Loading Capacity: A term referred to in the Clean Water Act that establishes an accepted rate of pollutant introduction to a waterbody that is directly related to water quality standard compliance.
Lotic -- Meaning or regarding things in running water.
Low-head dam -- A dam at which the water in the reservoir is not high above the turbine units.

M

Macroinvertebrate -- Invertebrates visible to the naked eye, such as insect larvae and crayfish.
Macrophytes: Large vascular plants and bryophytes (mosses and liverworts). Some large members of periphyton, such as long filaments of green alga Cladophora, may also be classified as Macrophytes.
MAF -- Million acre feet. The equivalent volume of water that will cover an area of one million acres to a depth of one foot. One MAF equals 1,000 KAF.
Mainstem -- The principle channel of a drainage system into which other smaller streams or rivers flow.
Mainstem passage -- The movement of salmon and steelhead around or through the dams and reservoirs in the Columbia and Snake rivers.

Mainstem survival -- The proportion of anadromous fish that survive passage through the dams and reservoirs while migrating in the Columbia and Snake rivers.
Managed forest -- Any forestland that is treated with silvicultural practices and/or harvested.
Margin of safety – When establishing the loading capacity a portion may be reserved (i.e. not allocated to nonpointed or point sources of pollution) so that the allowed pollutant loading becomes conservative.
Mass movement -- The downslope movement of earth caused by gravity. Includes but is not limited to landslides, rock falls, debris avalanches, and creep. It does not however, include surface erosion by running water. It may be caused by natural erosional processes, or by natural disturbances (e.g., earthquakes or fire events) or human disturbances (e.g., mining or road construction).
Maximum Sustainable Yield -- The largest average catch or yield that can continuously be taken from a stock under existing environmental conditions. (For species with fluctuating recruitment, the maximum might be obtained by taking fewer fish in some years than in others.) Also called; maximum equilibrium catch ; maximum sustained yield; sustainable catch.
Mean (μ): Refers to the arithmetic mean: $\mu = \frac{1}{n} \cdot \sum x_i$.
Mean Seal Level (MSL) -- A measure of elevation above sea level.
Measured Daily Solar Radiation Load: The rate of heat energy transfer originating from the sun as determined by using a Solar Pathfinder©.
Median: A value in the data in which half the values are above and half are below.
Megawatt-hour (MWh) -- A unit of electrical energy equal to one megawatt or power applied for one hour.
Megawatts (MW) -- A megawatt is one million watts or one thousand kilowatts, a measure of electrical power or generating capacity. A megawatt will typically serve about 1,000 people. The Dalles Dam produces an average of about 1,000 megawatts.
Mesic -- Moderately wet.
Migrant -- Life stage of anadromous and resident fish species which moves from one locale, habitat or system (river or ocean) to another.
Migrating -- Moving from one area of residence to another.
Minimum flow level -- The level of stream flow sufficient to support fish and other aquatic life; to minimize pollution; or to maintain other instream uses such as recreation and navigation.
Minimum operating pool -- The lowest water level of an impoundment at which navigation locks can still operate.
Minimum spanning tree -- A means of depicting nearest genetic neighbors. The tree is an undirected network of smallest genetic distances between genetic samples superimposed on multidimensional scaling graphs to reveal local distortion (pairs of points which look close together in one dimension, but which are far apart in other dimensions).
Mitigating measures -- Modifications of actions that (1) avoid impacts by not taking a certain action of parts of an action; (2) minimize impacts by limiting the degree or magnitude of the action and its implementation; (3) rectify impacts by repairing, rehabilitating, or restoring the affected environment; (4) reduce or eliminate impacts over time by preservation and maintenance operations during the life of the action; or (5) compensate for impacts by replacing or providing substitute resources or environments.
Mitigation -- The act of alleviating or making less severe. Generally refers to efforts to alleviate the impacts of hydropower development to the Columbia Basins salmon and steelhead runs.
Monitor -- To systematically and repeatedly measure conditions in order to track changes.
Morphology -- The structure, form and appearance of an organism.
Mortality -- The number of fish lost or the rate of loss.

N

Natal stream -- Stream of birth.
Native stock -- An indigenous stock of fish that has not been substantially affected by genetic interactions with non-native stocks or by other factors, and is still present in all or part of its original range.
Natural Mortality -- Deaths in a fish stock caused by predation, pollution, senility, etc., but not fishing.
Natural selection -- Differential survival and reproduction among members of a population or species in nature; due to variation in the possession of adaptive genetic traits.
Natural Sources of Pollution: Pollutant delivered to a water body that is directly related to processes that are inherent to normal processes unaffected by humans.
Naturally spawning populations -- Populations of fish that have completed their entire life cycle in the natural environment without human intervention.
Near Stream Disturbance Zone – The distance between shade producing near stream vegetation. This dimension is measured from digital orthophoto quads (DOQs) images at less than 1:5,000 scales. Where near stream vegetation is absent, the near stream boundary is used, as defined by armored streambanks or where near stream areas are unsuitable for vegetation growth due to external factors (i.e. roads, railroads, building, rock surfaces, etc.)

Nitrogen Supersaturation -- A condition of water in which the concentration of dissolved nitrogen exceeds the saturation level of water. Excess nitrogen can harm the circulatory system of fish.
Nonpoint source pollution -- Pollution that does not originate from a clear or discrete source.
Northwest power act -- The Pacific Northwest Electric Power Planning and Conservation Act of 1980 (16 U.S.C. 839 et seq.), which authorized the creation of the Northwest Power Planning Council and directed it to develop this program to protect, mitigate and enhance fish and wildlife, including related spawning grounds and habitat on the Columbia River and its tributaries.
Nutrient cycling -- Circulation or exchange of elements such as nitrogen and carbon between nonliving and living portions of the environment.
Nutrient depletion -- Detrimental changes on a site in the total amount of nutrients and/or their rates of input, uptake, release, movement, transformation, or export.

O

Objective -- A specific statement of planned results to be achieved by a predetermined date. Once achieved, the objectives represent measurable progress toward attainment of the broader goal.
Off-channel area -- Any relatively calm portion of a stream outside of the main flow.
Off-site enhancement -- The improvement in conditions for fish or wildlife species away from the site of a hydroelectric project that had detrimental effects on fish and/or wildlife, as part or total compensation for those effects. An example of off
Old-growth associated species -- Plant and animal species that exhibit a strong association with old-growth forests.
Old-growth forest -- A forest stand usually at least 180-220 years old with moderate to high canopy closure; a multilayered, multispecies canopy dominated by large overstory trees; high incidence of large trees; some with broken tops and other indicators of old and decaying wood (decadence); numerous large snags; and heavy accumulations of wood, including large logs on the ground.
On-site -- Usually refers to projects or activities designed to address harm caused to fish and wildlife at the site of the harm.
Operating year -- The 12 month period from August 1 through July 31.
Outfall -- The mouth or outlet of a river, stream, lake, drain or sewer.
Outflow -- The water that is released from a project during the specified period.
Outmigration -- The migration of fish down the river system to the ocean.
Outplanting -- Hatchery reared fish released into streams for rearing and maturing away from the hatchery sites.
Overstory -- Trees that provide the uppermost layer of foliage in a forest with more that one roughly horizontal layer of foliage.
Oxbow -- An abandoned meander in a river or stream, caused by neck cutoff. Used to describe the U-shaped bend in the river or the land within such a bend of a river.

P

Parameter -- "A ""constant"" or numerical description of some property of a population (which may be real or imaginary). Cf. statistic."
Parasitism -- The act of living in close association with another living organism at that organisms expense.
Passage -- The movement of migratory fish through, around, or over dams, reservoirs and other obstructions in a stream or river.
Pathogens -- Any agent that causes disease, such as a virus, protozoan, bacterium or fungus.
Peak flow -- Refers to a specific period of time when the discharge of a stream or river is at its highest point.
Perennial Flow: Stream flow that persists throughout all seasons, yearlong.
Perennial streams -- Streams which flow continuously.
Periphyton: Algae and other small autotrophs that are attached to substrate (submerged rocks, vegetation, etc.). Periphyton consist of complex assemblages of diatoms, green algae, and cyanobacteria (blue-green algae) and, to a lessor degree, yellow-brown algae, euglenoids and red algae.
pH: A measure of the hydrogen ion active concentration in aqueous solutions ($pH = -\log_{10}\{H^+\}$). Acidic solutions have a pH less than 7, neutral solutions have a pH of 7, and basic solutions have a pH that is greater than 7.
Physiological -- Pertaining to the functions and vital processes of living organisms and the organs within them.
Phytoplankton -- Microscopic floating plants, mainly algae, that live suspended in bodies of water and that drift about because they cannot move by themselves or because they are too small or too weak to swim effectively against a current.
Plankton -- Minute floating forms of microscopic plants and animals in water which cannot get about to any extent under their own power. They form the important beginnings of food chains for larger animals.
Plume -- The area of the Pacific Ocean that is influenced by discharge from the Columbia River, up to 500 miles beyond the mouth of the river.
Pluvial -- Of rain, formed by the action of rain, for example a body of water.

Point Source (PS) -- (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 (PS) Pollution -- Pollutants discharged from any identifiable point, including pipes, ditches, channels, sewers, tunnels, and containers of various types. See Non-Point Source (NPS) Pollution.
Policy -- A specific decision or set of decisions with related actions.
Pollutant -- (1) Something that pollutes, especially a waste material that contaminates air, soil, or water. (2) Any solute or cause of change in physical properties that renders water unfit for a given use.
Pond -- A body of water smaller than a lake, often artificially formed.
Pool -- A reach of stream that is characterized by deep low velocity water and a smooth surface.
Pool/riffle ratio -- The ratio of surface area or length of pools to the surface area or length of riffles in a given stream reach; frequently expressed as the relative percentage of each category. Used to describe fish habitat rearing quality.
Population -- A group of individuals of the same species occupying a defined locality during a given time that exhibit reproductive continuity from generation to generation.
Population density -- Number of individuals of a species per unit of area.
Population dynamics -- The aggregate of changes that occur during the life of a population.
Population viability -- Probability that a population will persist for a specified period across its range despite normal fluctuations in population and environmental conditions.
Potential Daily Solar Radiation Load: Based on the Julian calendar, for any particular location on earth, there exists a potential rate of heat energy transfer originating from the sun.
Power peaking -- The generation of electricity to meet maximum instantaneous power requirements; usually refers to daily peaks.
Powerhouse -- A primary part of a hydroelectric dam where the turbines and generators are housed and where power is produced by falling water rotating turbine blades.
Pre-smolt -- A juvenile salmon or steelhead that has not yet reached the physiological state known as a smolt.
Pre-spawning mortality -- Generally refers to non-fishery mortality of adult salmon and steelhead between the time the fish enter the Columbia River and the completion of spawning.
Predation -- Hunting and killing another animal for food.
Primary Channel Length: Length of the primary channel located in the survey reach. Units are meters.
Primary Channel Width: Bankfull width of a stream reported in meters.
Problem -- An obstacle to achieving a goal or objective.
Production -- 1. The total elaboration of new body substance in a stock in a unit of time, irrespective of whether or not it survives to the end of that time. Also called; *net production ; *total production. 2. *Yield.
Production capacity -- The capacity of a water body or production facility to produce fish.
Productivity -- A measure of the capacity of a biological system. Also used as a measure of the efficiency with which a biological system converts energy into growth and production.
Project -- Run-of-river or storage dam and related facilities; also a diversion facility.
Project outflow -- The volume of water per unit of time released from a project.
Public Utility -- A private business organization, subject to government regulation, that provides an essential commodity or service, such as water, electricity, transportation, or communications, to the public.
Public utility district (PUD) -- A government unit established by voters of a district to supply electric or other utility service.

Q

Quota -- A number of fish allocated for harvest to a particular fishing group or area.

R

Raceway -- A concrete, rectangular fish-rearing unit generally associated with a hatchery.
Range (of a species) -- The area or region over which an organism occurs.
Rapids -- A reach of stream that is characterized by small falls and turbulent high velocity water.
Rate: A measurable occurrence over a specified time interval.
Reach -- A section of stream between two defined points.
Reach Averaged: An average that is based on the occurrence of a property weighted by the occurrence frequency over perennial stream length.
Rearing habitat -- Areas in rivers or streams where juvenile salmon and trout find food and shelter to live and grow.
Rearing pond -- An artificial impoundment in which juvenile salmon and steelhead are raised prior to release into the natural habitat.
Recolonization -- The reestablishment of an organism in a habitat that it previously occupied.

Recovery -- Action that is necessary to reduce or resolve the threats that caused a species to be listed as threatened or endangered.

Recovery/restoration -- The reestablishment of a threatened or endangered species to a self-sustaining level in its natural ecosystem (i.e., to the point where the protective measures of the Endangered Species Act are no longer necessary).

Recreational Rivers -- Rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shoreline, and that may have undergone some impoundment or diversion in the past.

Recruitment -- The amount of fish added to the exploitable stock each year due to growth and/or migration into the fishing area. For example, the number of fish that grow to become vulnerable to the fishing gear in one year would be the recruitment to the fishable population that year. This term is also used in referring to the number of fish from a year class reaching a certain age. For example, all fish reaching their second year would be age 2 recruits. Recruitment Curve, Reproduction Curve; A graph of the progeny of a spawning at the time they reach a specified age (for example, the age at which half of the brood has become vulnerable to fishing), plotted against the abundance of the stock that produced them.

Redd -- A nest of fish eggs covered with gravel.

Redd Counts -- A spawning female salmon prepares a series of nests, called a redd, in suitable areas of streams by turning onto her side and beating her caudal fin up and down. Primary factors affecting suitability of spawning habitat include the size of rocks in the substrate and stream flow (high enough to provide adequate aeration for the eggs; low enough to prevent erosion of the nest). A completed redd is a shallow depression in the stream bottom with a rim extending to the downstream end. During spawning, the female continuously digs upstream, covering previously deposited eggs with gravel. Most redds occur in predictable areas and are easily identified by an experienced observer by their shape, size, and color (lighter than surrounding areas because silt has been cleaned away). Redd counts are conducted annually in certain heavy use areas of streams called index streams, which are usually surveyed repeatedly through the spawning season. Colored flags are sometimes placed on nearby trees to identify redds so that they will not be counted repetitively. Annual redd counts are used to compare the relative magnitude of spawning activity between years.

Reforestation -- The natural or artificial restocking of an area with forest trees.

Rehabilitation -- Short-term management techniques that restore fish stocks decimated or destroyed by natural or man-made events.

Reproduce -- To produce offspring.

Reregulating project -- A dam and reservoir, located downstream from a hydroelectric peaking plant, with sufficient storage capacity to store the widely fluctuating discharges from the peaking plant and to release them in a relatively uniform manner downstream.

Reservoir -- A body of water collected and stored in an artificial lake behind a dam.

Restoration -- The renewing or repairing of a natural system so that its functions and qualities are comparable to its original, unaltered state.

Riffle -- A reach of stream that is characterized by shallow, fast moving water broken by the presence of rocks and boulders.

Rift -- A shallow or rocky place in a stream, forming either a ford or a rapid.

Riparian area -- An area of land and vegetation adjacent to a stream that has a direct effect on the stream. This includes woodlands, vegetation, and floodplains.

Riparian habitat -- The aquatic and terrestrial habitat adjacent to streams, lakes, estuaries, or other waterways.

Riparian vegetation -- The plants that grow rooted in the water table of a nearby wetland area such as a river, stream, reservoir, pond, spring, marsh, bog, meadow, etc.

Ripple -- (1) To form or display little undulations or waves on the surface, as disturbed water does. (2) To flow with such undulations or waves on the surface.

Riprap -- Usually refers to rocks or concrete structures used to stabilize stream or river banks from erosion.

River basin -- See watershed.

River Channels -- Natural or artificial open conduits which continuously or periodically contain moving water, or which forms a connection between two bodies of water.

River Kilometer (RKm) -- Distance, in kilometers, from the mouth of the indicated river. Usually used to identify the location of a physical feature, such as a confluence, dam, or waterfall.

River miles -- Miles from the mouth of a river to a specific destination or, for upstream tributaries, from the confluence with the main river to a specific destination.

River Reach -- Any defined length of a river.

River Stage -- The elevation of the water surface at a specified station above some arbitrary zero datum (level).

Riverine -- Relating to, formed by, or resembling a river including tributaries, streams, brooks, etc.

Riverine habitat -- The aquatic habitat within streams and rivers.

Rock -- See cobble.

Rootwad -- The mass of roots associated with a tree adjacent or in a stream that provides refuge and nutrients for fish and other aquatic life.

Rule curves -- Water levels, represented graphically as curves, that guide reservoir operations.
Run (in stream or river) -- A reach of stream characterized by fast flowing low turbulence water.
Run-of-river dams -- Hydroelectric generating plants that operate based only on available inflow and a limited amount of short-term storage (daily/weekly pondage).
Runoff -- Water that flows over the ground and reaches a stream as a result of rainfall or snowmelt.

S

Salmonid -- Fish of the family Salmonidae, that includs salmon and steelhead.
Sand -- Small substrate particles, generally referring to particles less than 2 mm in diameter. Sand is larger than silt and smaller than cobble or rubble.
Scenic Rivers -- Rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive, and shorelines largely undeveloped but accessible in places by roads.
Scour -- The erosive action of running water in streams, which excavates and carries away material from the bed and banks. Scour may occur in both earth and solid rock material.
Secchi Depth -- A relatively crude measurement of the turbidity (cloudiness) of surface water. The depth at which a Secchi Disc (Disk), which is about 10-12 inches in diameter and on which is a black and white pattern, can no longer be seen.
Secchi Disc -- A circular plate, generally about 10-12 inches (25.4-30.5 cm) in diameter, used to measure the transparency or clarity of water by noting the greatest depth at which it can be visually detected. Its primary use is in the study of lakes.
Sediment -- The organic material that is transported and deposited by wind and water.
Sedimentation -- Deposition of sediment.
Self-sustaining population -- "A population that perpetuates itself, in the absence of (or despite) human intervention, without chronic decline, in its natural ecosystem. A self-sustaining population maintains itself at a level above the threshold for listing under the Endangered Species Act. In this document, the terms ""self-sustaining"" and ""viable"" are used interchangeably."
Sensitive species -- Those species that (1) have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered or threatened species or (2) are on an official state list or (3) are recognized by the U.S. Forest Service or other management agency as needing special management to prevent their being placed on federal or state lists.
Seral Stage: Refers to the age and type of vegetation that develops from the stage of bare ground to the climax stage.
Seral Stage - Early: The period from bare ground to initial crown closure (grass, shrubs, forbs, brush).
Seral Stage - Mid: The period of a forest stand from crown closure to marketability (young stand of trees from 25 to 100 years of age, includes hardwood stands).

Seral Stage - Late: The period of a forest stand from marketability to the culmination of the mean annual increment (mature stands of conifers and old-growth).
Shear Stress: The erosive energy associated with flowing water.
Silt -- Substrate particles smaller than sand and larger than clay.
Siltation -- The deposition or accumulation of fine soil particles.
Silviculture -- The science and practice of controlling the establishment, composition, and growth of the vegetation of forest stands.
Sinuosity -- The amount of bending, winding and curving in a stream or river.
Site Potential: Physical and biological conditions that are at maximum potential, taking into account local natural environmental constraints and conditions. Often used interchangeably with "system potential" in this document.
Slope -- The side of a hill or mountain, the inclined face of a cutting, canal or embankment or an inclination from the horizontal.
Slope stability -- The resistance of a natural or artificial slope or other inclined surface to failure by landsliding (mass movement).
Slough -- A shallow backwater inlet that is commonly exposed at low tide.
Sluiceway -- An open channel inside a dam designed to collect and divert ice and trash in the river (e.g., logs) before they get into the turbine units and cause damage. (On several of the Columbia River dams, ice and trash sluiceways are being used as, or converted into, fish bypass systems.)
Smolt -- Refers to 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.
Smoltification -- Refers to the physiological changes anadromous salmonids and trout undergo in freshwater while migrating toward saltwater that allow them to live in the ocean.
Snag -- Any standing dead, partially dead, or defective (cull) tree at least 10 inches in diameter at breast height and at least 6 feet tall.
Soft Water -- Water that contains low concentrations of metal ions such as calcium and magnesium. This type of water does not precipitate soaps and detergents. Compare to Hard Water.

Soil Compaction: Activities/processes, vibration, loading, pressure, that decrease the porosity of soils by increasing the soil bulk density $\left(\frac{Weight}{UnitVolume}\right)$.

Spawn -- The act of reproduction of fishes. The mixing of the sperm of a male fish and the eggs of a female fish.

Spawning channel -- An artificial gravel-bed area in which flow, depth and velocity are controlled at ideal levels for spawning by a particular species of salmon or steelhead.

Spawning surveys -- Spawning surveys utilize counts of redds and fish carcasses to estimate spawner escapement and identify habitat being used by spawning fish. Annual surveys can be used to compare the relative magnitude of spawning activity between years.

Species -- A group of closely related individuals that can interbreed and produce fertile offspring.

Spill -- Releasing water through the spillway rather than through the turbine units.

Spillway -- "The channel or passageway around or over a dam through which excess water is released or ""spilled"" past the dam without going through the turbines. A spillway is a safety valve for a dam and, as such, must be capable of discharging major floods without damaging the dam, while maintaining the reservoir level below some predetermined maximum level."

Spillway crest elevation -- The point at which the reservoir behind a dam is level with the top of the dam's spillway.

Standard Deviation (σ): The measure of how widely values are dispersed from the mean (μ).

$$\sigma = \sqrt{\frac{n \cdot \sum x^2 - \left(\sum x\right)^2}{n \cdot (n-1)}}.$$

Standardization -- The procedure of maintaining methods and equipment as constant as possible.

State water management agencies -- State government agencies that regulate water resources. They include the Idaho Department of Water Resources; the Montana Department of Natural Resources and Conservation; the Oregon Water Resources Department; and the Washington Department of Ecology.

Steelhead -- The anadromous form of the species Oncorhynchus mykiss. Anadromous fish spend their early life history in fresh water, then migrate to salt water, where they may spend up to several years before returning to fresh water to spawn. Rainbow trout is the nonanadromous form of Oncorhynchus mykiss.

Stock -- A specific population of fish spawning in a particular stream during a particular season.

Stock status -- The current condition of a stock, which may be based on escapement, run size, survival, or fitness level.

Stone -- Rock fragments larger than 25.4 cm (10 inches) but less than 60.4 cm (24 inches).

Storage -- The volume of water in a reservoir at a given time.

Storage reservoir -- A reservoir in which storage is help over from the annual high water period to the following low water period.

Strategic plan -- A comprehensive long-term plan that identifies goals and objectives, and the problems in meeting them, together with strategies or actions needed to overcome the problems.

Stream -- A general term for a body of flowing water; natural water course containing water at least part of the year. In Hydrology, the term is generally applied to the water flowing in a natural channel as distinct from a canal. More generally, as in the term Stream Gaging, it is applied to the water flowing in any channel, natural or artificial.

Stream Bank Erosion: Detachment, entrainment, and transport of stream bank soil particles via fluvial processes (i.e. local water velocity and shear stress).

Stream Bank Failure: Gravity related collapse of the stream bank by mass movement.

Stream Bank Retreat: The net loss of stream bank material and a corresponding widening of the stream channel that accompanies stream bank erosion and/or stream bank failure.

Stream Bank Stability: Measure of detachment, entrainment, and transport of stream bank soil particles by local water velocity and shear stress.

Stream Channel -- The bed where a natural stream of water runs or may run; the long narrow depression shaped by the concentrated flow of a stream and covered continuously or periodically by water.

Stream gradient -- A general slope or rate of change in vertical elevation per unit of horizontal distance of the water surface of a flowing stream.

Stream morphology -- The form and structure of streams.

Stream order -- A hydrologic system of stream classification. Each small unbranched tributary is a first order stream. Two first order streams join to make a second order stream. A third order stream has only first and second order tributaries, and so forth.

Stream reach -- An individual first order stream or a segment of another stream that has beginning and ending points at a stream confluence. Reach end points are normally designated where a tributary confluence changes the channel character or order.

Stream type -- Stream-type chinook salmon populations emigrate to the ocean as one- and two-year-old smolts. As juveniles, stream-type fish exhibit behavioral and morphological characteristics consistent with establishing and maintaining territories in freshwater systems (aggressive behavior, and larger, more colorful, fins). Little is known about the oceanic migration patterns of stream-type chinook salmon.

Streambank erosion -- The wearing away of streambanks by flowing water.
Streambank stabilization -- Natural geological tendency for a stream to mold its banks to conform with the channel of least resistance to flow. Also the lining of streambanks with riprap, matting, etc., to control erosion.
Streambed -- The channel through which a natural stream of water runs or used to run, as a dry streambed.
Streamflow -- The rate at which water passes a given point in a stream or river, usually expressed in cubic feet per second (cfs).
Streamlet -- A small stream.
Sub-Lethal Limit: Temperature levels that cause decreased or lack of metabolic energy for feeding, growth or reproductive behavior, encourage increased exposure to pathogens, decreased food supplies, and increased competition from warm water tolerant species.
Sub-basin -- Major tributaries to and segments of the Columbia and Snake rivers. Fourth level drainage basins of the USGS Hydrologic Unit Code are assigned the designation 'sub-basin.'
Subbasin planning -- See system planning.
Subdrainage -- A land area (basin) bounded by ridges or similar topographic features, encompassing only part of a watershed, and enclosing on the order of 5,000 acres; smaller than, and part of, a watershed.
Substrate -- The composition of a streambed, including either mineral or organic materials.
Succession -- A series of dynamic changes by which one group of organisms succeeds another through stages leading to potential natural community or climax.
Superfund list -- A list of the hazardous waste disposal sites most in need of cleanup. The list is updated annually by the U.S. Environmental Protection Agency (EPA) based primarily on how a site scores using the Hazard Ranking System. Also referred to as the National Priorities List (NPL).
Supersaturation -- See dissolved gas concentrations.
Supplementation -- The release and management of artificially propagated fish in streams with the intent to increase or establish wild fish populations while minimizing associated genetic and ecological risks.
Surface erosion -- The detachment and transport of soil particles by wind, water, or gravity. Or a groups of processes whereby soil materials are removed by running water, waves and currents, moving ice, or wind.
Surface Water -- All waters whose surface is naturally exposed to the atmosphere, for example, rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries, etc., and all springs, wells, or other collectors directly influenced by surface water.
Surrogate Measures (Load Allocation): A term referenced in the Clean Water Act that refers to “other appropriate measures” that can be allocated to meet an established and accepted pollutant loading capacity.
Survival Rate -- Number of fish alive after a specified time interval, divided by the initial number. Usually on a yearly basis.
Suspended sediment -- Sediment suspended in a fluid by the upward components of turbulent currents, moving ice, or wind.
Sustainable yield -- The number or weight of fish in a stock that can be taken by fishing without reducing the stock biomass from year to year, assuming that environmental conditions remain the same.
Sympatric -- Occupying the same geographic area. See parapatric and allopatric.
System planning -- A coordinated systemwide approach to planning in which each sub-basin in the Columbia system will be evaluated for its potential to produce fish in order to contribute to the goal of the overall system. The planning will emphasize the integration of fish passage, harvest management and production.
System potential -- Physical and biological conditions that are at maximum potential, taking into account local natural environmental constraints and conditions. Often used interchangeably with "site potential" in this document.

T

Tailrace -- The canal or channel that carries water away from the dam.
Take -- Under the Endangered Species Act, take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect an animal, or to attempt to engage in any such conduct.
Temperature Limited Waterbody: Refers to a stream or river that has been placed on the §303(d) list for violating water quality numeric criteria based on measured data.
Tempertaure Statistic: The maximum seasonal seven (7) day moving average of the daily maximum stream tempertaures.
Territory -- The area that an animal defends, usually during breeding season, against intruders of its own species.
Thalweg -- (1) The lowest thread along the axial part of a valley or stream channel. (2) A subsurface, ground-water stream percolating beneath and in the general direction of a surface stream course or valley. (3) The middle, chief, or deepest part of a navigable channel or waterway.
Thermocline -- That layer of water in a lake in which the temperature changes 10C with each meter increase in depth.
Threatened Species: Species that are likely to become endangered through their normal range within the foreseeable future.

Threatened waterbody: Any waterbody of the United States that currently attains water quality standards (designated uses, numeric and narrative criteria and antidegradation requirements defined at 40 CFR 131), but for which existing and readily available data and information on adverse declining trends or anticipated load measures indicate that water quality standards will likely be exceeded by the time the next list is required to be submitted to EPA.

Total Maximum Daily Load (TMDL): TMDLs are written plans and analyses established to ensure that the waterbody will attain and maintain water quality standards. The OAR definition is "The sum of the individual WLAs for point sources and LAs for nonpoint sources and background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs" (340-04l-006(21))

Torrent -- (1) A turbulent, swift-flowing stream. (2) A heavy downpour; a deluge.

Toxic Materials -- Any liquid, gaseous, or solid substance or substances in a concentration which, when applied to, discharged to, or deposited in water or another medium may exert a poisonous effect detrimental to people or to the propagation, cultivation, or conservation of animals, or other aquatic life.

Travel corridors -- Paths animals use during their migrations.

Treaty Indians -- Indian tribes with treaties with the US Government which guarantee certain fishing rights on and off the reservations.

Treaty tribes -- Any Indian tribe recognized by the United States government, with usual and accustomed fishing grounds, whose fishing rights were reserved under a treaty and have been affirmed by a federal court.

Trend -- (1) A statistical term referring to the direction or rate of increase or decrease in magnitude of the individual members of a time series of data when random fluctuations of individual members are disregarded. (2) A unidirectional increasing or decreasing change in the average value of a variable.

Tributary -- A stream that flows into another stream, river, or lake.

Tule -- Fall chinook stock native to the Columbia River tributaries.

Turbidity -- "The term ""turbid"" is applied to waters containing suspended matter that interferes with the passage of light through the water or in which visual depth is restricted."

Turbine -- A mechanism in a dam that rotates with the force of water and produces electricity.

Turbine intake screens -- Large screens, which may have moving or non moving parts, designed to be placed in a dam's turbine intake at an angle to deflect juvenile fish from the intakes into a bypass system.

U

Uncontracted water -- A volume of water in a storage reservoir that is not assigned for other purposes, such as irrigation.

Upriver stocks -- Salmon and steelhead stocks that spawn in the Columbia River or its tributaries above Bonneville Dam.

Urban runoff -- Storm water from city streets and gutters that usually contains a great deal of litter and organic and bacterial wastes into the sewer systems and receiving waters.

V

Velocity -- In this concept, the speed of water flowing in a watercourse, such as a river.

Velocity barrier -- A physical structure, such as a barrier dam or floating weir, built in the tailrace of a hydroelectric powerhouse, which blocks the tailrace from further adult salmon or steelhead migration to prevent physical injury or migration delay.

Viscosity -- A measure of the resistance of a fluid to flow. For liquids, viscosity increases with decreasing temperature.

W

Warmwater fish -- A broad classification on non-salmonid fish that generally have at least one spiny ray, have pelvic and pectoral fins located behind the gills, and are usually suited for water that consistently exceeds 70 degrees F.

Wash -- (1) To carry, erode, remove, or destroy by the action of moving water. To be carried away, removed, or drawn by the action of water. Removal or erosion of soil by the action of moving water. (2) A deposit of recently eroded debris. (3) Low or marshy ground washed by tidal waters. A stretch of shallow water. (4) (Western United States) The dry bed of a stream, articularly a watercourse associated with an alluvial fan, stream, or river channel. Washes are often associated with arid environments and are characterized by large, high energy discharges with high bed-material load transport. Washes are often intermittent and their beds sparsely vegetated. (5) Turbulence in air or water caused by the motion or action of an oar, propeller, jet, or airfoil.

Washout -- (1) Erosion of a relatively soft surface, such as a roadbed, by a sudden gush of water, as from a downpour or floods. (2) A channel produced by such erosion.
Wasteload Allocation (WLA): A term referenced in the Clean Water Act that refers to point source rates of pollutant delivery that can be specifically linked to an established and accepted pollutant loading capacity.
Wasteway -- An open ditch or canal that discharges excess irrigation water or power plant effluent into the river channel.
Water Conservation -- The physical control, protection, management, and use of water resources in such a way as to maintain crop, grazing, and forest lands, vegetative cover, wildlife, and wildlife habitat for maximum sustained benefits to people, agriculture, industry, commerce, and other segments of the national economy.
Water Pollution -- Generally, the presence in water of enough harmful or objectionable material to damage the water's quality.
Water quality -- A term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.
Water Quality Limited: Can mean one of the following categories: (a) A receiving stream which does not meet in-stream water quality standards during the entire year or defined season even after the implementation of standard technology; (b) A receiving stream which achieves and is expected to continue to achieve in-stream water quality standard but utilizes higher than standard technology to protect beneficial uses; (c) A receiving stream for which there is insufficient information to determine if water quality standards are being met with higher than standard treatment technology or where through professional judgment the receiving stream would not be expected to meet water quality standards during the entire year or defined season without higher than standard technology. (OAR 340-04l-006(30))
Water Resources -- The supply of groundwater and surface water in a given area.
Water rights -- "Priority claims to water. In western States, water rights are based on the principle ""first in time, first in right,"" meaning older claims take precedence over newer ones."
Water yield -- The quantity of water derived from a unit area of watershed.
Waterfall -- A sudden, nearly vertical drop in a stream, as it flows over rock.
Watershed: A drainage basin that contributes water, organic material, dissolved nutrients, and sediment to streams, rivers, and lakes.
Watershed project -- A comprehensive program of structural and nonstructural measures to preserve or restore a water shed to good hydrologic condition. These measures may include detention reservoirs, dikes, channels, contour trenches, terraces, furrows, gully plugs, revegetation, and possibly other practices to reduce flood peaks and sediment production.
Watershed restoration -- Improving current conditions of watersheds to restore degraded fish habitat and provide long-term protection to aquatic and riparian resources.
Watt -- A measure of the rate at which energy is produced, exchanged, or consumed.
Weir (dam) -- A dam in a river to stop and raise the water, for the purpose of conducting it to a mill, forming a fishpond, or the like. When uncontrolled, the weir is termed a fixed-crest weir. Other types of weirs include broad-crested, sharp-crested, drowned, and submerged.
Weir (fish trap) -- Usually a barrier constructed to catch upstream migrating adult fish.
Wet meadow -- Areas where grass predominate. Normally waterlogged within a few inches of the ground surface.
Width:Depth Ratio: The width of bankfull divided by the average depth in the survey reach of a stream.
Wild Rivers -- Rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted.
Wild stock -- A stock that is sustained by natural spawning and rearing in the natural habitat, regardless of parentage (includes native).
Wildfall -- Trees or parts of trees felled by high winds.
Wildlife -- Mammals and birds, game and non-game species that are not domesticated.
Wildlife tree -- A live tree retained to become future snag habitat.
Windthrow -- A tree or trees uprooted or felled by the wind.
Woodland -- Forest land producing trees not typically used as saw timber products and not included in calculation of the commercial forest land allowable sale quantity.
Woody debris -- Referring to wood in streams.

X

Xeric -- Dry.

Y

Yearling -- A one year old fish.
Yield -- The weight or number of fish removed by fishing during a defined time period.
Yolk -- The food part of an egg.

Z

Zooplankton -- Small aquatic animals that are suspended or swimming in water.