

## Glossary

**Abiotic** - Not involving living organisms.

**Aboriginal Areas** - This term is used today to describe the historic and prehistoric lands where a tribe (s) carried out food gathering or seasonal activities or traded with other Indian peoples. These areas are extensive. The range varies depending on the geographic terrain. FOR EXAMPLE: The Makah, paddled whaling canoes in excess of 120 miles from the Washington Coast out to sea. The Nez Perce used to hunt buffalo in Eastern Montana. The Umatillas used to travel to the Oregon Coast and the Warm Springs peoples used to fish at Willamette Falls. (McConnell, 2003)

**Absorbed dose** - In exposure assessment, the amount of a substance that penetrates an exposed organism's absorption barriers (e.g. skin, lung tissue, gastrointestinal tract) through physical or biological processes. Absorbed dose is synonymous with internal dose.

**Absorption** - The process by which the chemical or other substance is able to pass through body membranes and enter an organism. In mammals and many other animals, the main routes by which toxic agents are absorbed are the gastrointestinal tract, lungs, and skin.

**ACGIH** - American Conference of Governmental Industrial Hygienists. An organization of professionals in governmental agencies or educational institutions engaged in occupational safety and health programs. ACGIH develops and publishes recommended occupational exposure limits for chemicals (see TLV). (6500 Glenway Avenue, Bldg. D-7, Cincinnati, OH 45211; (513) 661-7881.

**ACS** - American Chemical Society.

**Active ingredient (a.i.)** - In any pesticide product, the component (a chemical or biological substance) that kills or otherwise controls the target pests. Pesticides are regulated primarily on the basis of active ingredients. The remaining ingredients are called "inerts".

**Acute effect** - An adverse effect on any living organism in which severe symptoms develop rapidly and often subside after the exposure stops.

**Acute exposure** - A single exposure or multiple brief exposures occurring within a short time (e.g., 24 hours or less in humans). The classification of multiple brief exposures as "acute" is dependant on the life span of the organism.

**Acute lethality** - The death of animals in a short period of time (typically up to 14 days in mammals) after a single dose of a toxic substance.

**Acute toxicity** - Any harmful effect produced in an organism through an acute exposure to one or more chemicals.

**Adaptation** - Changes in an organism's physiological structure or function or habits that allow it to survive in new surroundings.

**Adapted** - “How well plants are physiologically suited for high survival, good growth, and resistance to pests and diseases in a particular environment” (Northern Region Native Plant Handbook, 1995).

**Additive effect** - A situation in which the combined effects of exposure to two chemicals simultaneously is equal to the sum of the effect of exposure to each chemical given alone. The effect most commonly observed when an organism is exposed to two chemicals together is an additive effect.

**Adaptive management** - A continuing process of action-based planning, monitoring, researching, evaluating, and adjusting with the objective of improving implementation and achieving the goals of the standards and guidelines (USDA, USDI 1994a).

**Adjuvant(s)** - chemicals that are added to pesticide products to enhance the toxicity of the active ingredient or to make the active ingredient easier to handle or mix.

**Administratively Withdrawn Areas** - Areas removed from the suitable timber base through agency direction and land management plans

**Adsorption** - The tendency of one chemical to adhere to another material such as soil.

**Adverse-effect level (AEL)** - Signs of toxicity that must be detected by invasive methods, external monitoring devices, or prolonged systematic observations. Symptoms that are not accompanied by readily observable signs of toxicity. Compare to “Frank-effect level”.

**Advisory** - a non-regulatory document that communicates risk information to persons who may have to make risk management decisions.

**Aerobic** - life or processes that require, or are not destroyed by, the presence of oxygen. (see also, *anaerobic*).

**Affected Environment** - Existing biological, physical, social, and economic conditions of an area subject to change, both directly and indirectly, as the result of a proposed human action.

**Agent** - any substance, force, radiation, organism, or influence that affects the body. The effects may be beneficial or injurious.

**Alien Species** - “With respect to a particular ecosystem, any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem” (Executive Order 13122, 2/3/99).

**Algae** - simple plants containing chlorophyll. Many are microscopic, but under conditions favorable for their growth they grow in colonies and produce mats and similar nuisance masses.

**Algal blooms** - sudden spurts of algal growth, which can affect water quality adversely and indicate potentially hazardous changes in local water chemistry.

**Alkali** - broadly, any compound having highly basic properties; i.e., one that readily ionizes in aqueous solution to yield OH anions, with a pH above 7.

**Alkaline phosphatase** - An enzyme that occurs in various normal and malignant tissues. The activity of the enzyme in blood is useful in diagnosing many illnesses.

**Allelopathy** - the suppression of growth of one plant species due to the release of toxic substances by another plant.

**Allometric** - pertaining to allometry, the study and measure of growth. In toxicology, the study of the relationship of body size to various processes that may impact how chemicals effect the organism or how the chemicals are transported within the organism.

**Allotted Lands - On Reservation** - The Daws Act or General Allotment Act (1887), provided for dividing reservations into separate parcels, to encourage individual Indians in agricultural pursuits. Parcels were 160 acres for each family or 80 acres per single person. Any remaining acres over the population allocation were deemed “surplus” and opened up for settlement by non-Indians. Under the Act, Indian-held lands declined from 138 million acres in 1887 to 48 million acres in 1934. Of this remainder, 20 million acres is desert. The decline in Indian ownership was largely due to land being sold by Indian people in the interest of a short-term financial gain combined with a general disinterest in becoming a farmer. In 1934, this act was superseded by the Indian Reorganization Act. (McConnell, 2003)

**Allotted Lands - Off Reservation** - These lands were set aside to fulfill a need to maintain recognition of a specific group of Indian people. These are sometimes called Public Domain Allotments. Nearly all these acres are held in Trust status by the Interior Department, and administered by The Bureau of Indian Affairs. (McConnell, 2003)

**Alopecia** - loss of hair.

**Alluvial** - Relating to clay, silt, sand, gravel, or similar detrital material deposited by flowing water. Alluvial deposits may occur after a heavy rain storm.

**Ambient** - usual or surrounding conditions.

**Amphibian** - any of a class of cold-blooded vertebrates (including frogs, toads, or salamanders) intermediate in many characteristics between fishes and reptiles and having gilled aquatic larvae and air-breathing adults

**Anadromous** - fish that spend their adult life in the sea but swim upriver to fresh water spawning grounds to reproduce.

**Anaerobic** - life or process that occurs in, or is not destroyed by, the absence of oxygen.

**Animal Unit Months** - The amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day (Society for Range Management 1989).

**Anions** - negatively charged ions in solution e.g., hydroxyl or OH<sup>-</sup> ion.

**Annual** - A plant that endures for not more than a year. A plant which completes its entire life cycle from germinating seedling to seed production and death within a year: (Dayton, 1950).

**Anoxia** - literally, "without oxygen". A deficiency of oxygen reaching the tissues of the body especially of such severity as to result in permanent damage

**Antagonism** - the interaction of two chemicals having an opposing, or neutralizing, effect on each other, or a chemical interaction that appears to have an opposing or neutralizing effect on a specific biological effect over what might otherwise be expected.

**Antibodies** - proteins produced in the body by immune system cells in response to antigens, and capable of combining with antigens.

**Antidote** - a remedy to relieve, prevent, or counteract the effects of a poison. Eliminating the poison, neutralizing it, or absorbing it are effective.

**Antigens** - a substance that causes production of antibodies when introduced into animal or human tissue.

**Anuria** - absence or defective excretion of urine.

**Apnea** - a temporary stoppage of breathing.

**Aqueous** - describes a water-based solution or suspension.

**Aquifer** - An underground geological formation, or group of formations, containing usable amounts of groundwater that can supply wells and springs.

**Arid** - A terrestrial region lacking moisture, or a climate in which the rainfall is not sufficient to support the growth of most vegetation.

**Arthropods** - Invertebrates belonging to the largest animal phylum (more than 800,000 species) including crustaceans, insects, centipedes, and arachnids. Characterized by a segmented body, jointed appendages, and an exoskeleton composed of chitin (USDA, USDI 1994a).

**Assay** - A kind of test (noun); to test (verb).

**Asymptomatic** - neither causing nor exhibiting symptoms.

**Ataxia** - loss of reflexes or muscular coordination.

**Atrophy** - reduction in size or function of tissue, organs, or the entire body caused by lack of use.

**ATSDR** - Agency for Toxic Substances and Disease Registry; federal agency within the Public Health Service charged with carrying out the health-related analyses under CERCLA and SARA.

**Background level** - in pollution, the level of pollutants commonly present in ambient media (air, water, soil).

**Bacteria** - Microscopic living organisms that can aid in pollution control by metabolizing organic matter in soil, water, or other environmental media. Some bacteria can also cause human, animal and plant health problems.

**Basal application** - in pesticides, the spreading of a chemical on stems or trunks of plants just above the soil line.

**Base** - substances that (usually) liberate OH anions when dissolved in water and weaken a strong acid.

**Benchmark** - a dose associated with a defined effect level or designated as a no effect level.

**Benthic region** - the bottom layer of a body of water.

**Benthos** - the plants and animals that inhabit the bottom of a water body.

**Best management practice** - A practice or combination of practices determined by a state or an agency to be the most effective and practical means (technological, economic, and institutional) of controlling point and nonpoint source pollutants at levels compatible with environmental quality.

**Bioaccumulation** - The increase in concentration of a substance in living organisms as they take in contaminated air, water, or food because the substance is very slowly metabolized or excreted.

**Bioassay** - 1.) to measure the effect of a substance, factor, or condition using living organisms.  
2. a test to determine the toxicity of an agent to an organism.

**Bioconcentration** - The accumulation of a chemical in tissues of a fish or other aquatic organism to levels greater than in the surrounding water.

**Bioconcentration factor (BCF)** - The concentration of a compound in an aquatic organism divided by the concentration in the ambient water of the organism.

**Biodegradability** - susceptibility of a substance to decomposition by microorganisms; specifically, the rate at which compounds may be chemically broken down by bacteria and/or natural environmental factors.

**Biodiversity or biological diversity** - “The diversity of living things (species) and of life patterns and processes (ecosystem structures and functions). Includes genetic diversity, ecosystem diversity, landscape and regional diversity, and biosphere diversity” (USDA Forest Service. “An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins”, Vol. II, 1997).

**Biological Control** - The use of nonnative agents including invertebrate parasites and predators (usually insects, mites, and nematodes), and plant pathogens to reduce populations of nonnative, invasive plants.

**Biological Magnification** - the process whereby certain substances such as pesticides or heavy metals increase in concentration as they move up the food chain.

**Biologically sensitive** - A term used to identify a group of individuals who, because of their developmental stage or some other biological condition, are more susceptible than the general population to a chemical or biological agent in the environment.

**Biomass** - the amount of living matter.

**Biota or Biome** - all living organisms of a region or system.

**BMPs** - Best Management Practices.

**Body Burden** - The amount of a chemical stored in the body at a given time, especially a potential toxin in the body as the result of exposure.

**Bradycardia** - a decrease in normal heart rate.

**Broadcast application** - in pesticides, to spread a chemical over an entire area.

**Bryophytes** - Plants of the phylum *Bryophyta*, including mosses, liverworts, and hornworts; characterized by the lack of true roots, stems, and leaves (USDA, USDI 1994a).

**Buffer zone** - a strip of untreated land that separates a waterway or other environmentally sensitive area from an area being treated with a pesticide.

**Cancer potency parameter** - A model-dependent measure of cancer potency  $(\text{mg/kg/day})^{-1}$  over lifetime exposure. (Often expressed as a  $q_1^*$  which is the upper 95% confidence limit of the first dose coefficient ( $q_1$ ) from the multistage model.)

**Candidate Species** - Those plant and animal species that, in the opinion of the Fish and Wildlife Service (FWS) or NOAA Fisheries, may qualify for listing as endangered or threatened. The

FWS recognizes two categories of candidates. Category 1 candidates are taxa for which the FWS has on file sufficient information to support proposals for listing. Category 2 candidates are taxa for which information available to the FWS indicates that proposing to list is possibly appropriate, but for which sufficient data are not currently available to support proposed rules.

**Capillary Fringe** - The zone above the water table within which the soil or rock is saturated by water under less than atmospheric pressure.

**Carboxyhemoglobin** - Hemoglobin in which the iron is bound to carbon monoxide(CO) instead of oxygen.

**Carcinogen** - A chemical capable of inducing cancer.

**Carcinoma** - A malignant tumor (cancer).

**Carrier** - a non-pesticidal substance added to a commercial pesticide formulation to make it easier to handle or apply.

**CAS Registration number** - an assigned number used to identify a chemical. CAS stands for Chemical Abstracts Service, an organization that indexes information published in Chemical Abstracts by the American Chemical Society and that provides index guides to help locate information about particular substances in the abstracts. Sequentially assigned CAS numbers identify specific chemicals. The numbers have no chemical significance. The CAS number is a concise, unique means of chemical identification.

**Categorical Exclusion** - A class of actions which either individually or cumulatively would not have a significant effect on the human environment and therefore would not require preparation of an environmental assessment or environmental impact statement under the National Environmental Policy Act (NEPA).

**Cation** - positively charged ions in a solution.

**Ceded Lands** - This term was first used in the Treaty with the Wyandot, 1789. Since that time, many treaties referred to land cessions made by tribes to the United States. This term is used interchangeably with “treaty boundary” described elsewhere in the definitions. Most Federal agencies and Indian tribes prefer to use Ceded Lands when describing areas where a tribe did... “cede, relinquish, and convey to the U.S. all their right, title, and interest in the lands and country occupied by them”...at treaty signing or when reservations were established. Ceded land references are qualified by the legal definition of original tribal occupancy issued in 1978 by the U.S. Court of Claims. In effect: “only lands actually owned by a tribe can be ceded to the U.S.” (McConnell, 2003)

**Central nervous system (CNS)** - the portion of the nervous system consisting of brain and spinal cord.

**CERCLA** - Comprehensive Environmental Response, Compensation, and Liability Act. The initial legislation authorizing Superfund passed by Congress in December, 1980. This law created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment.

**Chlorophenoxy** - A class of herbicides including 2,4-D (2,4-dichlorophenoxy acetic acid) and 2,4,5-TP (2,4,5-Trichlorophenoxy propionic acid).

**Chemical Control** - The use naturally derived or synthetic chemicals called herbicides to eliminate or control the growth of invasive plants.

**Chlorophyll** - A class of molecules found in plant cells that convert the energy of sunlight to food in the process known as photosynthesis.

**Cholinesterase** - An enzyme found in animals that regulates nerve impulses. Cholinesterase inhibition is associated with a variety of acute symptoms such as nausea, vomiting, blurred vision, stomach cramps, and rapid heart rate, paralysis, convulsions, and death.

**Chlorosis** - Yellowing or blanching of the leaves of plants due to loss of chlorophyll from causes other than lack of light.

**Chronic exposure** - Exposures that extend over the average lifetime or for a significant fraction of the lifetime of the species (for a rat, chronic exposure is typically about 2 years). Chronic exposure studies are used to evaluate the carcinogenic potential of chemicals and other long-term health effects.

**Chronic RfD** - an estimate of a lifetime daily exposure level for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious effects. Chronic RfDs are specifically developed to be protective for long-term exposure to a compound (7 years to lifetime).

**Chronic toxicity** - the ability of a substance or mixture of substances to cause harmful effects over an extended period, usually upon repeated or continuous exposure sometimes lasting for the entire life of the exposed organism.

**Code of Federal Regulations (CFR)** - Document that codifies all rules of the executive departments and agencies of the federal government. It is divided into fifty volumes, known as titles. Title 40 of the CFR (referenced as 40 CFR) lists all environmental regulations, including regulations for EPA pesticide programs (40CFR Parts 150-189).

**Coliform** - Microorganisms found in the intestinal tract of humans and animals. Their presence in water indicates fecal pollution and potentially dangerous bacterial contamination by disease-causing microorganisms.

**Confidential Business Information (CBI)** - Information submitted to EPA by a pesticide registrant to fulfill requirements for pesticide registration that contains trade secrets or commercial or financial information that has been claimed as confidential by its source. EPA has special procedures for handling such information.

**Conifer Release** – An intermediate treatment or cutting (not part of the sapling stage), designed to free a young stand of desirable trees, from competition by undesirable trees or competing vegetation.

**Congressionally Reserved Areas** - Areas that require Congressional enactment for their establishment, such as National Parks, Wild and Scenic Rivers, National Recreation Areas, National Monuments, and Wilderness. Also referred to as Congressional Reserves (USDA, USDI 1994a). Includes similar areas established by Executive Order such as National Monuments.

**Conifer** - An order of the Gymnospermae, comprising a wide range of trees and a few shrubs, mostly evergreens that bear cones and have needle-shaped or scalelike leaves; Conifer timber is commercially identified as softwood.

**Conjunctivitis** - Inflammation of the conjunctive, the delicate membrane that lines the eyelid and covers the eyeball.

**Connected actions** - Exposure to other chemical and biological agents in addition to exposure to a specific pesticide formulation in a field application to control pest organisms

**Contaminants** - For chemicals, impurities present in a commercial grade chemical. For biological agents, other agents that may be present in a commercial product.

**Control** - Means, as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further invasions (Executive Order 13122, 2/3/99).

**Controls** - In toxicology or epidemiology studies, a population that is not exposed to the potentially toxic agent under study.

**Cornea** - the transparent structure of the external layer of the eyeball.

**Creatine** - An organic acid composed of nitrogen. It supplies the energy required for muscle contraction.

**Creatinine** - The end product of the metabolism of creatine. It is found in muscle and blood and is excreted in the urine.

**Critical Effect** - The first adverse effect that occurs as a dose rate increases. Designation is based on evaluation of overall database.

**Cultivar or variety** - “A variety of plant produced through selective breeding by humans and maintained by cultivation” (King, 1997).

**Cultural Control** - The establishment or maintenance of competitive vegetation, use of fertilizing, mulching, prescribed burning, or grazing animals to control or eliminate invasive plants.

**Cumulative exposures** - Exposures resulting from one or more activities that are repeated over a period of time.

**Cumulative Impact** - The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions—regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time (40 CFR 1508.7).

**Dams** - A term used to designate females of some animals such as rats.

**Defoliant** - a herbicide that removes leaves from growing plants.

**Degraded** - Broken down or destroyed.

**Denitrification** - Bacterial reduction of nitrite to gaseous nitrogen under anaerobic conditions.

**Dermal** - Pertaining to the skin.

**Dermal Absorption/Penetration** - Process by which a chemical penetrates the skin and enters the body as an internal dose.

**Dermatitis** - inflammation of the skin

**Detritivore** - Animal that consumes decomposing organic particles, deriving nutrition primarily from microbes on the particles.

**Detritus** - Loose fragments, particles, or grains formed by the disintegration of rocks or organic matter.

**Diatoms** - organisms related to algae, having a brown pigmentation and silicate-based skeleton.

**Dislodgeable residues** - The residue of a chemical or biological agent on foliage surface as a result of pesticide applications, which can be removed readily from the foliage by washing, rubbing or having some other form of direct contact with the treated vegetation.

**Dissociate** - the process of ionization of a salt upon being dissolved in water.

**Disturbance** - An effect of a planned human management activity, or unplanned native or exotic agent or event, that changes the state of a landscape element, landscape pattern, or regional composition” (USDA Forest Service. “An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins”, Vol. II, 1997).

**Diversity** - “The species richness of a community or area, though it provides a more useful measure of community characteristics when it is combined with an assessment of the relative abundance of species present” (Allaby, 1996).

**Dosage/Dose** - 1. The actual quantity of a chemical administered to an organism or to which it is exposed. 2. The amount of a substance that reaches a specific tissue (e.g. the liver). 3. The amount of a substance available for interaction with metabolic processes after crossing the outer boundary of an organism. (See – absorbed dose, administered dose, applied dose, potential dose.)

**Dose Rate** - In exposure assessment, dose per time unit (e.g. mg/day), sometimes also called dosage.

**Dose Response** - Changes in toxicological responses of an individual (such as alterations in severity of symptoms) or populations (such as alterations in incidence) that are related to changes in the dose of any given substance.

**Dose Response Curve** - Graphical representation of the relationship between the dose of a stressor and the biological response thereto.

**Dose-Response Assessment** - A description of the relationship between the dose of a chemical and the incidence of occurrence or intensity of a specific biological response. 3. Evaluating the quantitative relationship between dose and toxicological responses.

**Dose-Response Relationship** - The quantitative relationship between the amount of exposure to a substance and the extent of toxic injury or disease produced.

**Drift** - That portion of a sprayed chemical that is moved by wind off a target site.

**Dystrophic** - Acidic, shallow bodies of water that contain much humus and/or other organic matter, many plants but few fish.

**EC<sub>50</sub>** - A concentration in air or in water that causes 50% inhibition of growth.

**EC<sub>100</sub>** - A concentration in air or water that causes complete inhibition of growth.

**Ecosystem** - The complex of a community of organisms and its environments (Executive Order 13122, 2/3/99).

**Ecotype** - “A locally adapted population of a widespread species. Such populations show minor changes of morphology and/or physiology, which are related to habitat and are genetically induced. Heavy metal-tolerant ecotypes of common grasses such as *Agrostis tenuis* are an example” (Allaby, 1996).

**Edema** - an abnormal accumulation of clear, watery fluid in body tissue.

**Effects** - Effects, impacts, and consequences are synonymous. Effects may be direct, indirect, or cumulative and may fall in one of these categories: aesthetic, historic, cultural, economic, social, health, or ecological (such as effects on natural resources and on the components, structures, and functioning of affected ecosystems) (USDA USDI 1994a).

**Electrochemical process** - A newer manufacturing process for clopyralid.

**Embryo** - an organism in the early stages of development before birth. In humans, the developing child is considered an embryo from conception to the end of the second month of pregnancy.

**Empirical** - Refers to an observed, but not necessarily fully understood, relationship in contrast to a hypothesized or theoretical relationship.

**Endangered** - Any species listed in the *Federal Register* as being in danger of extinction throughout all or a significant portion of its range.

**Endangered Species Act (ESA)** - A law passed in 1973 to conserve species of wildlife and plants determined by the Director of the Fish and Wildlife Service or the NOAA Fisheries to be endangered or threatened with extinction in all or a significant portion of its range. Among other measures, ESA requires all federal agencies to conserve these species and consult with the Fish and Wildlife Service or NOAA Fisheries on federal actions that may affect these species or their designated critical habitat.

**Endemic** - “A species or other taxonomic group that is restricted to a particular geographic region due to factors such as isolation or response to soil or climatic conditions” (Allaby, 1996). Compare to “Indigenous” and “Native”.

**Endocrine** - referring to several glands in higher animals that secrete hormones.

**Environmental analysis** - An analysis of alternative actions and their predictable short-term and long-term environmental effects, incorporating physical, biological, economic, and social considerations (USDA, USDI 1994a).

**Environmental Impact Statement (EIS)** - A statement of the environmental effects of a proposed action and alternatives to it. It is required for major federal actions under Section 102 of the National Environmental Policy Act (NEPA), and released to the public and other agencies for comment and review. It is a formal document that must follow the requirements of NEPA, the CEQ guidelines, and directives of the agency responsible for the project proposal.

**Environmental assessment** - a written environmental analysis which is prepared pursuant to the National Environmental Policy Act to determine whether a federal action would significantly affect the environment and thus require preparation of a more detailed environmental impact statement.

**Environmental Equity/Justice** - Equal protection from environmental hazards for individuals, groups, or communities regardless of race, ethnicity, or economic status. This applies to the development, implementation, and enforcement of environmental laws, regulations, and policies, and implies that no population of people should be forced to shoulder a disproportionate share of negative environmental impacts of pollution or environmental hazard due to a lack of political or economic strength levels.

**Environmental fate** - The destiny of a chemical or biological pollutant after release into the environment.

**Environmental impact statement (EIS)** - A document which identifies and analyzes, in detail, environmental impacts of a proposed action. As a tool for decision-making, the EIS describes positive and negative effects and lists alternatives for a proposed activity. Required by NEPA.

**Enzymes** - A biological catalyst; a protein, produced by an organism itself, that enables the splitting (as in digestion) or fusion of other chemicals.

**Epidemiology study** - A study of a human population or human populations. In toxicology, a study which examines the relationship of exposures to one or more potentially toxic agent to adverse health effects in human populations.

**Epilimnion** - Upper waters of a thermally stratified lake subject to wind action.

**Estimated/Expected Environmental Concentration (EEC)** - The estimated or expected pesticide concentration in an environmental media based on a particular set of assumptions and/or models.

**Eutrophication** - the slow aging process of a lake transforming into a marsh and eventually disappearing. During eutrophication the lake is choked by abundant plant life.

**Evapotranspiration** - the loss of water from the soil both by evaporation and by transpiration from the plants growing in the soil.

**Exposure assessment** - The process of estimating the amount of contact with a chemical or biological agent that an individual or a population of organisms will receive from a pesticide application conducted under specific, stated circumstances

**Exotic** - "Not native; introduced from elsewhere, but not completely naturalized" (Harris, 1994). See "Alien Species".

**Experimental Use Permit** - Obtained by manufacturers for testing new, unregistered pesticides or new uses for registered pesticides whenever they conduct experimental field studies on 10 acres or more of land or one acre or more of water to support registration.

**Extirpate** - To destroy completely; wipe out.

**Extrapolation** - The use of a model to make estimates of values of a variable in an unobserved interval from values within an already observed interval.

**Fauna** - The wildlife or animals of a specified region or time.

**Federal Campus** - These are small parcels of land within a reservation for the use of the Bureau of Indian Affairs to build and maintain government housing, schools and administration buildings. (McConnell, 2003)

**Federal Recognition** - Acknowledgment of an Indian tribe as a government entity that has a special relationship with the United States government. This relationship recognizes that Indian tribes receive some benefits or reserve some rights not available to other citizens; for example, health and education benefits from the trust relationship or off-reservation hunting and fishing rights related to treaties with tribal governments.

The basic requirements for attaining Federal recognition include the following in the form of a petition to the Secretary of the Interior:

1. A statement of facts regarding the continued identity of a group as “American Indian” or “Aboriginal” from historic times to the present.
2. Evidence that a group exists as a community separate from other populations.
3. Evidence it has maintained political influence over its members.
4. A governing document such as a constitution.
5. An enrollment list of all members.
6. Not be involved in pending legislation regarding their status, or terminated by former Congressional action. (McConnell, 2003)

**Federally Listed Species** - formally listed as a threatened or endangered species under the ESA. Designations are made by the FWS or NMFS.

**Fetal anomaly** - An abnormal condition in a fetus, which is usually the result of a defect in development.

**Field capacity** - The maximum amount of water that a soil can retain after excess water from saturated conditions has been drained by the force of gravity.

**FIFRA Pesticide Ingredient** - An ingredient of a pesticide that must be registered with EPA under the Federal Insecticide, Fungicide, and Rodenticide Act. Products making pesticide claims must submit required information to EPA to register under FIFRA and may be subject to labeling and use requirements.

**Fire Management Plan** - A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans. (Interagency Implementation Guide, 1998).

**Flora** - Plant life, especially all the plants found in a particular country, region, or time regarded as a group. Also, a systematic set of descriptions of all the plants of a particular place or time.

**Flowable** - Pesticide formulations in which the active ingredients are finely ground insoluble solids suspended in a liquid. They are mixed with water for application.

**Food chain** - a hierarchical sequence of organisms, each of which feeds on the next, lower member of the sequence.

**Forage** - Food for animals. In this document, term applies to both availability of plant material for wildlife and domestic livestock.

**Forest Ecosystem Management Assessment Team (FEMAT)** - An interagency, interdisciplinary team of scientists, economists, and sociologists led by Dr. Jack Ward Thomas and chartered to review proposals for management of federal forests within the range of the northern spotted owl. The team produced a report assessing ten options in detail, which were used as a basis for developing the Northwest Forest Plan.

**Formulation** - A commercial preparation of a chemical including any inerts and/or contaminants.

**Fugitive Loss** - When applied to dermal exposure, the chemical lost from the surface of the skin by means other than dermal absorption such as volatilization, washing, and loss of skin cells.

**Frank effects** - Toxic effects that show obvious physical or behavioral symptoms/signs.

**Frank-effect level (FEL)** - The dose or concentration of a chemical or biological agent that causes obvious physical or behavioral symptoms/signs of toxicity.

**Fungi** - Any of a major group of organisms usually classified as plants that lack chlorophyll and include molds, rusts, mildews, smuts, mushrooms, and yeasts. Some grow in the ground, others attach themselves to decaying trees and other plants, getting their nutrition from decomposing organic matter.

**Game Fish** - Species like trout, salmon, or bass, caught for sport. Many of them show more sensitivity to environmental change than non-game fish.

**Gavage** - The placement of a toxic agent directly into the stomach of an animal, using a gastric tube.

**Genotoxic** - Causing direct damage to genetic material. Associated with carcinogenicity.

**Geometric mean** - The measure of an average value often applied to numbers for which a log normal distribution is assumed.

**Gestation** - The period between conception and birth; in humans, the period known as pregnancy.

**GRAS** - Generally Recognized As Safe. A phrase applied to food additives approved by the FDA.

**Gross Area** - An area of land occupied by one or more invasive plant species. The area is defined by drawing a line around the general perimeter of the infestation, not the canopy cover of the plants. The gross area may contain significant parcels of land that are not occupied by the weed. (NRIS Standards)

**Groundwater** - the supply of fresh water found beneath the Earth's surface, usually in aquifers, which is often supplies wells and springs.

**Habitat** - The place where a population (e.g., human, animal, plant, microorganism) lives and its surroundings, both living and non-living.

**Halftime or half-life** - The time required for the concentration of the chemical to decrease by one-half.

**Hand Scalping for Planting** - Hand scalping for planting is one of the forms of mechanical site preparation that removes competing vegetation and other damaging agents from the planting spot to increase the rate of survival of the planted material.

**Hazard quotient (HQ)** - The ratio of the estimated level of exposure to a substance from a specific pesticide application to the RfD for that substance, or to some other index of acceptable exposure or toxicity. A HQ less than or equal to one is presumed to indicate an acceptably low level of risk for that specific application.

**Hazard identification** - The process of identifying the array of potential effects that an agent may induce in an exposed of humans or other organisms.

**Health Advisory Level** - A non-regulatory health-based reference level of chemical concentrations in drinking water at which there are no adverse health risks when ingested over various periods of time. Such levels are established by the Office of Drinking Water of the U.S. EPA for one day, 10 days, long-term and life-time exposure periods.

**Hematological** - Pertaining to the blood.

**Hematology** - One or more measurements regarding the state or quality of the blood.

**Hematuria** - blood in the urine.

**Hemolytic anemia** - A medical condition in which the number of red blood cells is decreased due to breakdown in the bloodstream.

**Henry's law constant** - An index of the tendency of a compound to dissolve in and/or volatilize from aqueous solutions.

**Herbaceous** - A plant that does not develop persistent woody tissue above the ground (annual, biennial, or perennial). Herbaceous vegetation includes grasses and grass-like vegetation, and broadleaved forbs.

**Herbicide** - A chemical preparation designed to kill plants, especially weeds, or to otherwise inhibit their growth.

**Herbivore** - an animal that feeds on plants.

**Heterotroph** - Bacteria and other microorganisms that use organic matter synthesized by other organisms for energy and growth.

**Histology** - The study of the structure of cells and tissues; usually involves microscopic examination of tissue slices.

**Histopathology** - Signs of tissue damage that can be observed only by microscopic examination.

**Humus** - Organic portion of the soil remaining after prolonged microbial decomposition.

**Hydrolysis** - Decomposition or alteration of a chemical substance by water.

**Hydrogeology** - The geology of ground water, with particular emphasis on the chemistry and movement of water.

**Hydroxylation** - The addition of a hydrogen-oxygen or hydroxy (-OH) group to one of the rings. Hydroxylation increases the water solubility of most compounds and generally facilitates the elimination of the compound in the urine or bile.

**Hydrophilic** - having an affinity for or being very soluble in water.

**Hydrophobic** - lacking an affinity for water; is not wettable or soluble in water.

**Hydroxyl** - the anion of water or OH<sup>-</sup>, also present in all hydroxides.

**Hypolimnion** - Bottom waters of a thermally stratified lake. The hypolimnion of a eutrophic lake is usually low or lacking in oxygen.

**Hypoxic** - A condition of low oxygen concentration.

***In situ*** - The original location in the body or environment.

***In vivo*** - Occurring in the living organism.

***In vitro*** - Isolated from the living organism and artificially maintained, as in a test tube.

**Indian Country** - A popular term today, which was derived from a reference to lands occupied by Indian peoples historically; then applied to reservations. It is commonly used now when

referring to areas of concern to Indian tribes or even individuals, when conducting Indian business or protecting rights. (McConnell, 2003)

**Indian Land** - Any land in collective tribal holding or ownership for which the Secretary of the Interior has a continuing trust responsibility to manage for the benefit of the respective tribe. Indian lands and reservations are not public lands and public land laws do not generally apply. In the past this term described certain parcels or areas where Indian lived and represented a smaller concept than Indian Territory. (McConnell, 2003)

**Indian Rights and Interest** - Indian treaty and other rights or interests recognized by treaties, statutes, laws, executive orders, or other government action, or federal court decisions. (McConnell, 2003)

**Indian Territory** - Unsurveyed lands that were recognized by the Federal government to be occupied or used by Indians. Prior to the United States Constitution, lands occupied or used by American Indians were referred to as Indian Territory. Historic documents dating back to the 16<sup>th</sup> century refer to these unsurveyed regions as a territory. (McConnell, 2003)

**Indian Tribe** - Any American Indian or Alaska Native tribe, band, nation, pueblo, community, rancheria, colony, or group meeting the provisions of the Code of Federal Regulations Title 25, Section 83.7 (25 FR 83.7) or those recognized in statutes or treaties with the United States. (McConnell, 2003)

**Indigenous** - "Born, growing, or produced naturally in a region or country; native" (Soil Conservation Society of America, 1982).

**Inerts** - anything other than the active ingredient in a pesticide product; not having pesticide properties.

**Infested Area** - A contiguous area of land occupied by a single invasive plant species. An infested area of land is defined by drawing a line around the actual perimeter of the infestation as defined by the canopy cover of the plants, excluding areas not infested. Generally, the smallest area of infestation mapped will be 1/10<sup>th</sup> (.10) of an acre or 0.04 hectares. (NRIS Standards).

**Ingestion** - the taking in of a substance through the mouth for digestion.

**Internal Dose** - In exposure assessment, the amount of a substance penetrating the absorption barriers (e.g. skin, lung tissue, gastrointestinal tract) of an organism through either physical or biological processes; synonymous with absorbed dose.

**Interpolation** - The use of mathematical models within the range of observations

**Intraperitoneal** - Injection into the abdominal cavity.

**Integrated Risk Information System (IRIS)** - IRIS is an EPA data base containing verified RfDs and related information for numerous chemicals. Available at:

<http://www.epa.gov/iriswebp/iris/index.html>.

**Integrated Weed Management (IWM)** - An interdisciplinary weed management approach for selecting methods for preventing, containing, and controlling noxious weeds in coordination with other resource management activities to achieve optimum management goals and objectives (FSM 2080.5)

**Interdisciplinary team (IDT)** - A group of individuals with varying areas of specialty assembled to solve a problem or perform a task. The team is assembled out of recognition that no one scientific discipline is sufficiently broad enough to adequately analyze the problem and propose action

**Introduced Species** - An alien or exotic species that has been intentionally or non-intentionally released into an area as a result of human activity. "Introduced (agricultural crops may fit the definition as well as 'native' or 'introduced' wildland species) or exotic species whose genetic material originally evolved and developed under different environmental conditions than those of the area in which it was introduced, often in geographically and ecologically distant locations" (Brown, 1997). See also "Noxious Weed" and "Exotic".

**Introduction** - "The intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity" (Executive Order 13122, 2/3/99).

**Invasive Plant Species** - An alien plant species whose introduction does or is likely to cause economic or environmental harm or harm to human health (Executive Order 13122, 2/3/99).

**Iritis** - Inflammation of the iris, the circular pigmented membrane behind the cornea, perforated by the pupil.

**Irreversible effect** - Effect characterized by the inability of the body to partially or fully repair injury caused by a toxic agent.

**Irritant** - non-corrosive material that causes a reversible inflammatory effect on living tissue by chemical action at the site of contact as a function of concentration or duration of exposure

**Issue** - A point, matter, or question of public discussion or interest to be addressed or decided through the planning process.

**LC<sub>50</sub> (lethal concentration<sub>50</sub>)** - A calculated concentration of a chemical in air or water to which exposure for a specific length of time is expected to cause death in 50% of a defined experimental animal population.

**LD<sub>50</sub> (lethal dose<sub>50</sub>)** - The dose of a chemical calculated to cause death in 50% of a defined experimental animal population over a specified observation period. The observation period is typically 14 days.

**Label** - All printed material attached to or part of the pesticide container (W).

**Land allocation** - Commitment of a given area of land or a resource to one or more specific uses (such as campgrounds or Wilderness). In the Northwest Forest Plan, one of the seven allocations of Congressionally Withdrawn Areas, Late-Successional Reserves, Adaptive Management Areas, Managed Late-Successional Areas, Administratively Withdrawn Areas, Riparian Reserves, or Matrix.

**Land management** - Intentional process of planning, organizing, programming, coordinating, directing, and controlling land use actions.

**Latency** - Time from the first exposure to a chemical until the appearance of a toxic effect.

**Late-successional forests** - Forest stands consisting of trees, structural attributes, supporting biological communities, and processes associated with old-growth and/or mature forests (USDA, USDI 1994a). Forest seral stages that include mature and old-growth age classes (USDA, USDI 1994a). Age is not necessarily a defining characteristic but has been used as a proxy or indicator in some usages. Minimum ages are typically 80 to 130 years, more or less, depending on the site quality, species, rate of stand development, and other factors.

**Leachate** - Water that collects chemicals as it trickles through soil or other porous media containing the chemicals.

**Leaching** - the process by which chemicals on or in soil or other porous media are dissolved and carried away by water, or are moved into a lower layer of soil.

**Level of Concern (LOC)** - The concentration in media or some other estimate of exposure above which there may be effects.

**Lethargy** - sluggish behavior. Less than typical activity.

**Lichens** - Complex thallophytic plants comprised of an alga and a fungus growing in symbiotic association on a solid surface (such as a rock).

**Lipophilic** - having an affinity for oil or fat.

**Littoral zone** - 1). That portion of a body of fresh water extending from the shoreline lakeward to the limit of occupancy of rooted plants. 2). The strip of land along the shoreline between the high and low water levels.

**Local** - “”Pertaining to, characteristic of, or restricted to a particular place or particular places” (Barnhart, 1970).

**Local Native** - “A population of native plant species which originated, i.e., grew from seeds or cuttings, from genetically local sources. The geographic and elevational boundaries that define a species’ genetically local source are determined by plant movement guidelines” (Mt. Baker-Snoqualmie NF Native Plant Handbook, 1994).

**Lowest-observed-adverse-effect level (LOAEL)** - The lowest dose of a chemical in a study, or group of studies, that produces statistically or biologically significant increases in frequency or severity of adverse effects between the exposed and control populations.

**Lymphatic** – Pertaining to lymph, a lymph vessel, or a lymph node.

**Lymph** - A clear water fluid containing white blood cells. Lymph circulates throughout the lymphatic system, removing bacteria and certain proteins from body tissue. It also is responsible for transporting fat from the small intestine and supplying mature lymphocytes to the blood.

**Macrophyte** - terrestrial or aquatic plant that is large enough to be seen without the aid of a microscope.

**Macroscopic organisms** - Organisms big enough to be seen by the eye without the aid of a microscope.

**Malignant** - Cancerous.

**Manual Control** - The use of any non-mechanized approach to control or eliminate invasive plants (i.e. hand-pulling, grubbing).

**Margin of safety (MOS)** - The ratio between an effect or no effect level in an animal and the estimated human dose.

**Margin of Exposure (MOE)** - The ratio of the no-observed adverse-effect-level to the estimated exposure dose.

**Marsh** - A type of wetland that does not accumulate appreciable peat deposits and is dominated by herbaceous vegetation. Marshes may be either fresh or saltwater, tidal or non-tidal.

**Material safety data sheet (MSDS)** - a compilation of information required under the OSHA Communication Standard on the identity of hazardous chemicals, health and physical hazards, exposure limits, and precautions.

**Mature forest** - A subset of Late-Successional forests. Mature forests are characterized by the onset of slowed height growth, crown expansion, heavier limbs, gaps, some mortality in larger trees, and appearance of more shade-tolerant species or additional crown layers. In Douglas-fir west of the Cascades, this stage typically begins between 80 and 130 years, depending on site conditions and stand history (adapted from USDA, USDI 1994b, pp. B-2 and B-3).

**Maximally (or Most) Exposed Individual** - The person with the highest exposure in a given population.

**Maximum Acceptable Toxic Concentration** - For a given ecological effects test, the range (or geometric mean) between the No Observable Adverse Effect Level and the Lowest Observable Adverse Effects Level.

**Maximum Tolerated Dose** - The maximum dose that an animal species can tolerate for a major portion of its lifetime without significant impairment or toxic effect other than carcinogenicity.

**Mechanical Control** - The use of any mechanized approach to control or eliminate invasive plants (i.e. mowing, weed whipping).

**Mechanical Site Preparation** – Mechanical site preparation involves physical modification of the site by hand or machinery to prepare a seedbed or planting spot for the reforestation of the site.

**Media** - Specific environments such as air, water, soil, animal or plant matter.

**Mesotrophic** - Reservoirs and lakes which contain moderate quantities of nutrients and are moderately productive in terms of aquatic animal and plant life.

**Methemoglobin** - a soluble, brown, crystalline blood pigment that differs from hemoglobin in that it contains ferric iron and is unable to combine reversibly with molecular oxygen.

**Methemoglobinemia** - the presence of methemoglobin in the bloodstream caused by the reaction of materials with the hemoglobin in red blood cells that reduces their oxygen-carrying capacity.

**Metabolism** - The sum of the chemical reactions occurring within a cell or a whole organism; includes the energy-releasing breakdown of molecules (catabolism) and the synthesis of new molecules (anabolism).

**Metabolite** - A compound formed as a result of the metabolism or biochemical change of another compound.

**Metameter** - Literally, the unit of measure. Used in dose-response or exposure assessments to describe the most relevant way of expressing dose, exposure or response.

**Microcosm** - A small but representative system analogous to a larger system in composition, development, or configuration.

**Microorganisms** - A generic term for all organisms consisting only of a single cell, such as bacteria, viruses, protozoans and some fungi.

**Microsomal** - Pertaining to portions of cell preparations commonly associated with enzymes involved in the metabolism of xenobiotics.

**Mineralization** - The release of inorganic chemicals from organic matter in the process of aerobic or anaerobic decay – i.e., typically used as an expression of complete degradation.

**Minimal risk level (MRL)** - A route-specific (oral, dermal, or inhalation) and duration-specific

estimate of an exposure level that is not likely to be associated with adverse effects in the general population, including sensitive subgroups.

**Minimum tool** - Use of a weed treatment alternative that would accomplish management objectives and have the least impact on resources.

**Mitigation measures** - Modifications of actions taken to: (1) avoid impacts by not taking a certain action or 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 (USDA, USDI 1994a).

**Mitochondria** - A component in a cell this is involved in the conversion of food to stored chemical energy.

**Modeling** - Use of mathematical equations to simulate and predict real events and processes.

**Molecule** - The smallest division of a compound that still retains or exhibits all the properties of the substance.

**Mollusks** - Invertebrate animals (such as slugs, snails, clams, or squids) that have a soft unsegmented body usually enclosed in a calcareous shell.

**Monitoring** - A process of collecting information to evaluate if objectives and anticipated or assumed results of a management plan are being realized or if implementation is proceeding as planned (USDA, USDI 1994a).

**Morbidity** - Rate of disease, injury or illness.

**Most sensitive effect** - The adverse effect which is observed at the lowest dose level, given the available data. This is an important concept in risk assessment because, by definition, if the most sensitive effect is prevented, no other effects will develop. Thus, RfDs are normally based on doses at which the most sensitive effect is not likely to develop.

**Motile** - Capable of self-propelled movement. A term that is sometimes used to distinguish between certain types of organisms found in water.

**Mucous membrane** - a thin soft pliable layer of tissue that secretes mucous; i.e., nose, mouth, stomach, intestine, bronchial tubes, and urinary tract.

**Multiple chemical sensitivity** - A syndrome that affects individual persons who are extremely sensitive to chemicals at extremely low levels of exposure.

**Mutagenicity** - The ability of a substance to cause genetic damage (that is damage to DNA or RNA).

**Mutagen** - a substance that causes mutations.

**Mutation** - a change in the genetic material in a cell. Mutations can lead to adverse clinical effects.

**Narcosis** - stupor or unconsciousness often produced by exposure to organic chemicals.

**National Environmental Policy Act (NEPA)** - An Act passed in 1969 to declare a National policy that encourages productive and enjoyable harmony between humankind and the environment, promotes efforts that prevent or eliminate damage to the environment and biosphere, stimulates the health and welfare of humanity, enriches the understanding of the ecological systems and natural resources important to the nation, and establishes a Council on Environmental Quality (USDA, USDI 1994a).

**National Forest Management Act (NFMA)** - A law passed in 1976 as an amendment to the Forest and Rangeland Renewable Resources Planning Act, requiring preparation of Forest Plans and the preparation of regulations to guide that development (USDA, USDI 1994a).

**National Marine Fisheries Service (NMFS)** - The federal agency that is the listing authority for marine mammals and anadromous fish under the ESA.

**National Pollutant Discharge Elimination System (NPDES)** - A provision of the Clean Water Act which prohibits discharge of pollutants into waters of the United States unless a special permit is issued by EPA, a state, or, where delegated, a tribal government on an Indian reservation.

**Native Species** - With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem (Executive Order 13122, 2/3/99).

**Naturalized** - “Applied to a species that originally was imported from another country but that now behaves like a native in that it maintains itself without further human intervention and has invaded native populations” (Allaby, 1996).

**Necrosis** - Death of plant or animal cells or tissues. In plants, necrosis can discolor stems or leaves or kill a plant entirely. In animals, necrosis can be minimal (focal or diffuse) or massive – i.e., resulting in loss of organ function that can sometimes lead to death of the organism.

**Nematodes** - Roundworms, some of which are pathogenic for plants and sometimes animals.

**Neurotoxin** - a material that affects the nerve cells and may produce muscular, emotional, behavioral abnormalities, impaired or abnormal motion and other physiologic changes.

**Neutral** - in pH terms, 7; neither acid nor basic.

**Nitrification** - the process whereby ammonia in soil or water is oxidized to nitrite and then to nitrate by bacterial or chemical reactions.

**Nitrogen fixation** - The biological or chemical process by which elemental nitrogen, from the air, is converted to organic or available nitrogen.

**Non-local Native** - “This term has two meanings: 1) a population of a native plant species which does not occur naturally in the local ecosystem and/or 2) plant material of a native species that does not originate from genetically local sources. (Northern Region Native Plant Handbook, 1995).

**Non-target** - Any plant or animal that is not the intended organism to be controlled by a pesticide treatment.

**No-observed-adverse-effect level (NOAEL)** - exposure level at which there are no statistically or biological significant differences in the frequency or severity of any adverse effect in the exposed or control populations.

**No-Observed-Effect-Level (NOEL)** - exposure level at which there are no statistically or biological significant differences in the frequency or severity of any effect in the exposed or control populations.

**Normal distribution** - A standard pattern used in statistics to describe one way in which variability occurs in a population.

**Northwest Forest Plan** - Coordinated ecosystem management direction incorporated into land and resource management plans for lands administered by the BLM and the Forest Service within the range of the northern spotted owl. In April 1993, President Clinton directed his cabinet to craft a balanced, comprehensive, and long-term policy for management of over 24 million acres of public land within the range of the northern spotted owl. A Forest Ecosystem Management Assessment Team (FEMAT) was chartered to develop a series of options. These options were modified in response to public comment and additional analysis and then analyzed in a Final Supplemental Environmental Impact Statement (USDA, USDI 1994a). A Record of Decision was signed on April 13, 1994, by the Secretaries of the Department of Agriculture and the Department of Interior to adopt Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl (USDA, USDI 1994b). The Record of Decision, including the Standards and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl is referred to as the “Northwest Forest Plan.” The Northwest Forest Plan is not a “plan” in the agency planning regulations sense; the term instead refers collectively to the 1994 amendment to existing agency land and resource management plans or to the specific standards and guidelines for Late-Successional species incorporated into subsequent land and resource management plans.

**Noxious Weed** - “Any living stage (including but not limited to, seeds and reproductive parts) of any parasitic or other plant of a kind, or subdivision of a kind, which is of foreign origin, is

new to or not widely prevalent in the United States, and can directly or indirectly injure crops, other useful plants, livestock, or poultry or other interests of agriculture, including irrigation, or navigation or the fish and wildlife resources of the United States or the public health” (Public Law 93-629, January 3, 1975, Federal Noxious Weed Act of 1974).

**Octanol-water partition coefficient ( $K_{ow}$ )** - The equilibrium ratio of the concentrations of a chemical in n-octanol and water, in dilute solution.

**Ocular** - Pertaining to the eye.

**OECD Guidelines** - Testing guidelines prepared by the Organization of Economic and Cooperative Development of the United Nations. They assist in preparation of protocols for studies of toxicology, environmental fate, etc.

**Off-Highway Vehicle Recreation** – In this document, the term off-highway vehicle (OHV) refers to vehicles used for off-highway pursuits and may include 3 and 4 wheelers, motorcycles, dune buggies, 4x4 vehicles, and other motorized vehicles.

**Old-growth forest** - An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics which may include tree size, accumulations of large dead woody material, number of canopy layers, species, composition, and ecosystem function. More specific parameters applicable to various species are available in the 1993 Interim Old Growth Definitions (USDA Forest Service Region 6). The Northwest Forest Plan SEIS and FEMAT describe old-growth forest as a forest stand usually at least 180 to 220 years old with moderate-to-high canopy closure; a multi-layered, multi-species canopy dominated by large overstory trees; high incidence of large trees, some with broken tops and other indications of old and decaying wood (decadence); numerous large snags; and heavy accumulations of wood, including large logs on the ground (USDA, USDI 1994a).

**Oligotrophic** - a term applied to describe deep clear lakes with low nutrient supplies. They contain little organic matter and have a high dissolved oxygen level.

**Oliguria** - scanty or low volume of urine.

**Oral Toxicity** - Ability of a pesticide to cause injury when ingested.

**Organic matter** - carbonaceous material contained in soil, plants or animal matter.

**Parenteral** - Any form of injection into the body.

**Partition** - In chemistry, the process by which a compound or mixture moves between two or more media.

**Partition Coefficient** - The ratio of concentrations of a chemical in two different media at equilibrium – e.g. octanol/water.

**Pathogen** - A living organism, typically a bacteria or virus, that causes adverse effects in another organism.

**Pathway** - In metabolism, a sequence of metabolic reactions.

**Percolation** - downward flow or filtering of water through pores or spaces in rock or soil.

**Perennial** - A plant species having a life span of more than 2 years.

**Periphyton** - Microscopic plants and animals that are firmly attached to solid surfaces under water such as rocks, logs, pilings and other structures.

**Permeability** - For dermal exposures, permeability refers to the degree to which a chemical in contact with the skin is able to penetrate the skin.

**Persistence** - refers to the length of time a compound, once introduced into the environment, stays there.

**Personal Protective Equipment (PPE)** - Clothing and equipment worn by pesticide mixers, loaders and applicators and re-entry workers, hazmat emergency responders, workers cleaning up Superfund sites, et. al., which is worn to reduce their exposure to potentially hazardous chemicals and other pollutants.

**Pest** - An insect, rodent, nematode, fungus, weed or other form of terrestrial or aquatic plant or animal life that is classified as undesirable because it is injurious to health or the environment.

**Pesticide** - Any substance used for controlling, preventing, destroying, repelling, or mitigating any pest. Includes fungicides, herbicides, fumigants, insecticides, nematocides, rodenticides, desiccants, defoliant, plant growth regulators, and so forth. (W, modified).

**Pesticide tolerance** - the amount of pesticide residue allowed by law to remain in or on a harvested crop.

**pH** - The negative log of the hydrogen ion concentration. A high pH (>7) is alkaline or basic and a low pH (<7) is acidic.

**Pharmacokinetics** - The quantitative study of the absorption, distribution, metabolism, and excretion of chemicals by an organism.

**pK<sub>a</sub>** - The negative log of the hydrogen ion concentration or pH at which 50% of a weak acid is dissociated.

**Photosynthesis** - the manufacture by plants of carbohydrates and oxygen from carbon dioxide and water in the presence of chlorophyll, using sunlight as an energy source.

**Physiographic province** - A geographic area having a similar set of biophysical characteristics and processes due to effects of climate and geology that result in patterns of soils and broad-scale plant communities. Habitat patterns, wildlife distributions, and historical land use patterns may differ significantly from those of adjacent provinces (USDA, USDI 1994a) (See Figure 1 in the standards and guidelines).

**Phytoplankton** - that portion of the plankton community – i.e., organisms in water – comprised of tiny plants, e.g., algae, diatoms.

**Phytotoxic** - something that harms plants.

**Plankton** - small aquatic organisms with limited powers of locomotion, carried by water currents from place to place.

**Planning area** - All of the lands within a federal agency's management boundary addressed in land management plans (USDA, USDI 1994a).

**Population** - "A group of individuals of the same species in an area" (Wilson and Hipkins, 1999).

**Population at Risk** - A population subgroup that is more likely to be exposed to a chemical, or is more sensitive to the chemical, than is the general population.

**Porosity** - Degree to which soil, gravel, sediment, or rock is permeated with pores or cavities through which water or air can move.

**Portal-of-Entry Effect** - A local effect produced in the tissue or organ of first contact between a toxicant and the biological system.

**Potable Water** - Water that is considered safe for drinking and cooking.

**Potentiation** - The ability of one chemical to increase an effect of another chemical on an organism.

**Precautionary Principle** - When information about potential risks is incomplete, basing decisions about the best ways to manage or reduce risks on avoiding unnecessary or uncertain health risks instead of on avoiding unnecessary economic expenditures.

**Precommercial Thinning** - A critical treatment made to reduce stand density of trees primarily to improve growth or enhance forest health to improve growth or enhance forest health and is associated with sapling and pole size stands.

**Predation** - The act or practice of capturing another creature (prey) as a food source.

**Pre-disturbance surveys** - See "Surveys Prior to Habitat-Disturbing Activities."

**Prescribed Fire** - Any fire ignited by management actions to meet specific objectives. A written approved fire plan must exist, and NEPA requirements must be met, prior to ignition. This term replaces management ignited prescribed fire. (Interagency Implementation Guide, 1998).

**Prevention** - To detect and ameliorate conditions that cause or favor the introduction, establishment, or spread of invasive plants.

**Procaryote** - A single-celled organism in which the nucleus has no limiting membrane

**Programmatic** - Of having, advocating, or following a plan, policy, or program, as in a *Programmatic EIS*.

**Propagule** - A structure (cutting, seed, or spore) that allows a plant to reproduce.

**Proposed species** - Any plant or animal species that is proposed by the Fish and Wildlife Service or NOAA Fisheries in a Federal Register notice to be listed as threatened or endangered.

**Proposive surveys** - One type of landscape-scale or strategic survey, proposive surveys are focused searches conducted where taxa experts anticipate finding the target species. They are used to find sites of the rarest species, i.e. those that may not be picked up in random plots. Also referred to as purposive surveys.

**Potential Vegetation Type** – The term potential vegetation type (PVT) is used to represent the combination of species that could occupy the site in the absence of disturbance.

**Protozoa** - Single-celled, microorganisms without cell walls containing visibly evident nuclei and organelles. Most protozoa are free-living although many are parasitic.

**Prospective** - In epidemiology, a type of study in which the populations are identified prior to exposure to a presumptive toxic agent, in contrast to a retrospective study.

**Protinated** - an acid ( $A^-$ ) that is combined with a proton ( $H^+$ ) and has a neutral charge ( $AH$ ). The dissociated form of the acid has a negative charge ( $A^-$ ) e.g.: Sulfuric acid:  $H_2SO_4 \leftrightarrow 2H^+ + SO_4^-$

**Prudent industrial hygiene** - precautionary measures taken to protect human health when exposed to potentially harmful materials. This includes keeping hands, other parts of the body, work clothing, and equipment free of a material's residue, as well as not eating, drinking, applying makeup, or using toilet facilities where the material is in use.

**Pruning** - Pruning is the removal of limbs on the lower portion of a tree. The primary objectives of pruning are to increase the clear wood volume of a tree when harvested and for purposes of disease control. Other objectives may include wildlife habitat improvement, aesthetics, and reduction of fuel loads.

**Pulmonary edema** - fluid in the lungs.

**Rare** - A species is considered to be rare when: there are a low number of extant known sites with low numbers of individuals present at each site and populations are not well-distributed within its natural range. "Low" numbers and "not well distributed" are relative terms that must be considered in the context of other criteria such as distribution of habitat, fecundity, and so forth. See complete list of criteria under "Relative Rarity" in the standards and guidelines.

**Receiving waters** - All distinct bodies of water that receive runoff or wastewater discharges, such as streams, rivers, ponds, lakes, and estuaries.

**Receptor** - Ecological entity exposed to a stressor.

**Reclamation** - The process of mitigating physical or chemical environmental conditions perceived to be limiting to land management objectives and attempting to alter or lessen the effect of environmental damage through whatever means are available" (Brown, 1997).

**Record of Decision** - A document separate from, but associated with, an environmental impact statement that: (1) states the management decision; (2) states the reason for that decision, (3) identifies all alternatives including the environmentally preferable and selected alternatives; and (4) states whether all practicable measures to avoid environmental harm from the selected alternative have been adopted, and if not, why not (USDA, USDI 1994a).

**Reference Dose (RfD)** - The RfD is a numerical estimate of a daily exposure to the human population, including sensitive subgroups such as children, that is not likely to cause harmful effects during a lifetime. RfDs are generally used for health effects that are thought to have a threshold or minimum dose for producing effects.

**Registered Pesticides** - Pesticide products which have been approved for the uses listed on the label (W).

**Rehabilitate** - "Producing an alternative ecosystem that is consistent with existing land uses but that has a different structure and function from the original system [i.e. ski areas]" (National Academy of Sciences, 1974).

**Registration** - Formal licensing with EPA of a new pesticide before it can be sold or distributed. Under the Federal Insecticide, Fungicide, and Rodenticide Act, EPA is responsible for registration (pre-market licensing) of pesticides on the basis of data demonstrating no unreasonable adverse effects on human health or the environment when applied according to approved label directions.

**Release** - A treatment done to free desirable trees from competition with less desirable vegetation.

**Relative weight** - The weight of an organ, such as the liver or kidney, divided by the total body weight of the animal.

**Reproductive effects** - Adverse effects on the reproductive system that may result from exposure to a chemical or biological agent. The toxicity of the agents may be directed to the reproductive organs or the related endocrine system. Toxic effects may be manifested as alterations in sexual behavior, fertility, pregnancy outcomes, or modifications in other functions dependent on the integrity of this system.

**Reregistration** - the reevaluation and relicensing by EPA of existing pesticides that were originally registered prior to current scientific and regulatory standards. EPA re-registers pesticides through its Registration Standards Program.

**Resorption** - Removal by absorption. Often used in describing the unsuccessful development and subsequent removal of post-implantation embryos.

**Restoration** - “[Ecological restoration] is the process of assisting the recovery and management of ecological integrity. Ecological integrity includes a critical range of variability in biodiversity, ecological processes and structures, regional and historical context, and sustainable cultural practices” (Society of Ecological Restoration, 2000).

**Retrospective** - Looking behind. In epidemiology, a type of study in which the populations are identified after exposure to a presumptive toxic agent, in contrast to a prospective study.

**Revegetation** - “The re-establishment of plants on a site (does not imply native or non-native; does not imply that the site can ever support any other types of plants or species and is not at all concerned with how the site ‘functions’ as an ecosystem)”. (Northern Region Native Plant Handbook, 1995).

**RfD** - A daily dose which is not anticipated to cause any adverse effects in a human population over a lifetime of exposure. These values are derived by the U.S. EPA.

**Riparian Area** - A geographic area containing an aquatic ecosystem and adjacent upland areas that directly affect it (Northwest Forest Plan).

**Riparian Reserves** - Areas along live and intermittent streams, wetlands, ponds, lakes, and unstable and potentially unstable areas where riparian-dependent resources receive primary emphasis. Riparian Reserves are important to the terrestrial ecosystem as well, serving as dispersal habitat for certain terrestrial species (USDA, USDI 1994a).

**Risk Assessment** - An analytic process that is firmly based on scientific considerations, but also requires judgments to be made when the available information is incomplete. These judgments inevitably draw on both scientific and policy considerations. (VMT).

**Risk** - the chance of an adverse or undesirable effect.

**Risk assessment** - the qualitative and quantitative evaluation performed in an effort to estimate the risk posed to human health and/or the environment by the presence or potential presence and/or use of specific chemical or biological agents.

**Risk communication** - the exchange of information about health or environmental risks between risk assessors, risk managers, the general public, news media, interest groups, etc.

**Risk management** - the process of evaluating potential alternative regulatory and non regulatory responses to risk and selecting among them. The selection process necessarily requires the consideration of legal, economic and social factors.

**Rough Fish** - Fish not prized for sport or eating, such as gar and suckers. Most are more tolerant of changing environmental conditions than are game or food species.

**Road prism** - This is the horizontal template of a road that includes the road running surface, cutslope, fillslope, and ditch.

**Route of exposure** - The way in which a chemical or biological agent enters the body. Most typical routes include oral (eating or drinking), dermal (contact of the agent with the skin), ocular (eye contact) and inhalation.

**SARA** - Superfund Amendments and Reauthorization Act (1986); federal law reauthorizing and expanding the jurisdiction of CERCLA. Signed into law October 17, 1986. Title III of SARA is known as the Emergency Planning and Community Right-to-Know Act of 1986. It is a revision and extension of CERCLA.

**Saturated zone** - a subsurface area in which all pores and cracks are filled with water under pressure equal to or greater than that of the atmosphere.

**Scientific notation** - The method of expressing quantities as the product of a number between 1 and 10 multiplied by 10 raised to some power. For example, in scientific notation, 1 kg = 1,000g would be expressed as  $1 \text{ kg} = 1 \times 10^3 \text{ g}$  and 1 mg = 0.001 would be expressed as  $1 \text{ mg} = 1 \times 10^{-3}$ .

**Seed Transfer Zone** - "Geographic subdivisions within the Region, encompassing areas of similar environmental conditions" (USDA Forest Service, 1993).

**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; (2) are on an official state list; or, (3) are recognized by the implementing agencies as needing special management to prevent their being placed on federal or state lists (USDA, USDI 1994a).

**Sensitive subgroup** - Subpopulations that are much more sensitive than the general public to certain agents in the environment.

**Sensitization** - A condition in which one is or becomes excessively or abnormally susceptible or reactive to an agent through repeated exposure.

**Signal Words** - The words used on a pesticide label to indicate a level of toxicity specified by EPA: Danger, Warning, or Caution.

**Silviculture** - Management of forest land for diverse purposes through manipulation of the density, structure and species composition of the trees thereon.

**Sink** - Place in the environment where a compound or material collects.

**Site preparation** - The removal of competing vegetation and debris to enhance a site for planting, and survival and growth of seedlings, or to enhance germination of natural seed (on site).

**Special Review** - Formerly known as Rebuttable Presumption Against Registration (RPAR), this is the regulatory process through which EPA reviews existing pesticides suspected of posing unreasonable risks to human health, non-target organisms, or the environment. Special review requires an intensive risk/benefit analysis with opportunity for public comment. If EPA determines that risks outweigh social and economic benefits, EPA may initiate regulatory actions ranging from label revisions and use-restriction to cancellation or suspended registration.

**Species** - "A group of organisms all of which have a high degree of physical and genetic similarity, generally interbreed only among themselves, and show persistent differences from members of allied groups of organisms" (Executive Order 13122, 2/3/99).

**Species-to-species extrapolation** - A method using exposure data on one species (usually an experimental animal) to estimate the effects of exposure in another species (usually humans or wildlife).

**Stokes' law** - an formula for calculating the rate of fall of particles through a air or a fluid based on densities, viscosity, and particle size.

**Standards and guidelines** - The rules and limits governing actions, as well as the principles specifying the environmental conditions or levels to be achieved and maintained (USDA, USDI 1994a).

**Subchronic exposure** - An exposure duration that can last for different periods of time (5 to 90 days), with 90 days being the most common test duration for mammals. The subchronic study is usually performed in two species (rat and dog) by the route of intended use or exposure.

**Subchronic toxicity** - the ability of one or more substances to cause effects over periods from about 90 days but substantially less than the lifetime of the exposed organism. Subchronic toxicity only applies to relatively long-lived organisms such as mammals.

**Subcutaneous** - beneath the skin.

**Submerged Aquatic Vegetation** - Vegetation that lives at or below the water surface; an important habitat for young fish and other aquatic organisms.

**Substrate** - With reference to enzymes, the chemical that the enzyme acts upon.

**Succession** - “The development of biotic communities following disturbances that produce an earlier successional community” (USDA Forest Service. “An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins”, Vol. II, 1997).

**Surface water** - all water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors which are directly influenced by surface water.

**Surfactant** - a surface active agent; usually an organic compound whose molecules contain a hydrophilic group at one end and a lipophilic group at the other. Promotes solubility of a chemical, or lathering, or reduces surface tension of a solution.

**Survey and Manage** - Mitigation measure adopted as a set of standards and guidelines within the Northwest Forest Plan Record of Decision and replaced with standards and guidelines in 2001 (Record of Decision) intended to mitigate impacts of land management efforts on those species that are closely associated with Late-Successional or old-growth forests whose long-term persistence is a concern. This mitigation measure applies to all land allocations and requires land managers to take certain actions relative to species of plants and animals, particularly some amphibians, bryophytes, lichens, mollusks, vascular plants, fungi, and arthropods, which are rare or about which little is known. These actions include: (1) manage known sites; (2) survey prior to habitat-disturbing activities; and, (3) conduct extensive and general regional (strategic) surveys.

**Surveys Prior to Habitat Disturbing Activities** - Surveys conducted to determine if the species is present at a site proposed for habitat disturbing activities. Includes “practical surveys” and “equivalent-effort surveys”.

**Synergistic effect** - situation in which the combined effects of exposure to two chemicals simultaneously is much greater than the sum of the effect of exposure to each chemical given alone.

**Systemic effects** - Effects observed at sites distant from the entry point of a chemical due to its absorption and distribution in the body.

**Systemic toxicity** - Effects that require absorption and distribution of a toxic agent to a site distant from its entry point at which point effects are produced. Systemic effects are the opposite of local effects.

**Tachycardia** -excessively rapid heartbeat.

**Tachypnea** -increased rate of respiration.

**Take** - To kill or capture a species covered by the ESA.

**Teratogenic** -Causing structural defects that affect the development of an organism; causing birth defects.

**Teratology** -The study of malformations induced during development of young animals including humans from conception to birth.

**Threatened species** - Plant or animal species likely to become endangered throughout all or a significant portion of its range within the foreseeable future. A plant or animal identified and defined in accordance with the 1973 Endangered Species Act and published in the Federal Register (USDA, USDI 1994a).

**Threshold** - The maximum dose or concentration level of a chemical or biological agent that will not cause an effect in the organism.

**Threshold Limit Value (TLV)** - The concentration of an airborne substance to which an average person can be repeatedly exposed without adverse effects. TLVs may be expressed in three ways – (1) TLV-TWA--Time weighted average, based on an allowable exposure averaged over a normal 8-hour workday or 40-hour work- week; (2) TLV-STEL--Short-term exposure limit or maximum concentration for a brief specified period of time, depending on a specific chemical (TWA must still be met); and (3) TLV-C--Ceiling Exposure Limit or maximum exposure concentration not to be exceeded under any circumstances. (TWA must still be met.)

**Thymus** - small gland that is the site of T-cell production. The gland is composed largely of lymphatic tissue and is situated behind the breastbone. The gland plays an important role in the human immune system.

**Time-weighted average (TWA)** - The average air concentration of material during a given period of time.

**Tolerances** - Permissible residue levels for pesticides in raw agricultural produce and processed foods. Whenever a pesticide is registered for use on a food or a feed crop, a tolerance (or exemption from the tolerance requirement) must be established. EPA establishes the tolerance levels, which are enforced by the Food and Drug Administration and the Department of Agriculture.

**Toxicity** - The inherent ability of an agent to affect living organisms adversely. As defined by U.S. EPA, toxicity is “...the degree to which a substance or mixture of substances can harm humans or animals.

**Toxicology** - The study of the nature, effects, and detection of poisons in living organisms. Also, substances that are otherwise harmless but prove toxic under particular conditions. The basic assumption of toxicology is that there is a relationship among the dose (amount), the concentration at the affected site, and the resulting effects.

**Traditional** - The beliefs, acts, practices, objects and/or sites for the perpetuation of an Indian culture originating from or historically located at a specific area. This may include cultural

practices that are so interrelated with spiritual activities that they cannot be separated from the land location. (McConnell, 2003)

**Transpiration** - The process by which living plants release water vapor to the atmosphere.

**Treated Area** - An infested area where weeds have been treated or retreated by an acceptable method for the specific objective of controlling their spread or reducing their density. (NRIS Standards).

**Treaty** - A legally binding agreement between two or more sovereign governments. With respect to American Indian tribes, a treaty is a document negotiated and concluded by a representative of the President of the United States and ratified by 2/3 majority vote of the U.S. Senate. (McConnell, 2003)

**Treaty Boundaries** - A modern term that applies to lands described within the treaty document, usually outlining an area of land that is ceded to the U.S. (McConnell, 2003)

**Treaty Resources** - Resources upon which the exercise of the treaty right depends. An exhaustive list does not exist, because Indian tribes maintain confidentiality for names of medicines or spiritual plants and other natural resources. (McConnell, 2003)

**Treaty rights** - Tribal rights or interests reserved in treaties, by Indian Tribes for the use and benefit of their members. The uses include such activities as described in the respective treaty document. Only Congress may abolish or modify treaties or treaty rights. (McConnell, 2003)

**Tribal Self-Governance** - First stated in modern terms by former President Nixon in 1970, as “Self Determination”, this refers to the ability of Indian Tribal governments to make decisions that affect either the general tribal population or tribal assets. A modern U.S. Indian policy that reinstates the independent decision making process of Indian tribal entities that had existed before European contact. In 1982, Congress passed new authorities whereby Indian Tribes could sign a Compact directly with the Secretary of the Interior without involving the Bureau of Indian Affairs in the delivery of federal services. Using appropriations formerly sent through the Bureau of Indian Affairs, Indian Tribes can now prioritize their own expenditures of federal funds. (McConnell, 2003)

**Trust allotment** - Federal land set aside for the exclusive use of an Indian, who is the allottee. The Federal government retains land ownership, many allotments are outside the bounds of Indian reservations, called public domain allotments. (McConnell, 2003)

**Trust Land** - Any land in collective tribal holding or individual ownership for which the Secretary of the Interior has a continuing trust responsibility to manage in a manner to benefit the respective tribe or individual. The most common example is forested acres on a reservation. Some Trust lands were set aside as compensation for claims made against the Government; most of which are off-reservation. (McConnell, 2003)

**Trust Resources** - Indian owned assets, held in trust status by the Secretary of the Interior for the exclusive use and benefit of tribes or their members. Such as property, tribal timber or other resources usually found within the bounds of Indian reservations. (McConnell, 2003)

**Trust Responsibility** - This term has never been defined by the U.S. Congress, any President or Cabinet official. Generally it is a set of principles and concepts outlining the responsibilities of the United States Government to act as the trustee of Indian people and Indian owned assets. The United States government, through the President has certain responsibilities to protect Indian property and rights, Indian lands, and resources. The trust responsibility may involve a fiduciary obligation in which the President, through the Secretary of the Interior acts as the trustee of Indian assets. Fulfilling or redeeming a trust responsibility, can best be reflected or demonstrated as a matter of action; a stream that was protected, a site that was maintained in tact, a property right that has been left unaffected by a federal action. The writing of an environmental document is not an example of fulfillment of a trust duty. (McConnell, 2003)

**Uncertainty factor (UF)** - A factor used in operationally deriving the RfD and similar values from experimental data such as NOAEL or LOAEL. UFs are intended to account for (1) the variation in sensitivity among members of the human population; (2) the uncertainty in extrapolating animal data to humans; (3) the uncertainty in extrapolating from data obtained in a study that is less than lifetime exposure; and (4) the uncertainty in using LOAEL data rather than NOAEL data. Usually each of these factors is set equal to 10.

**Unsaturated** - In terms of molecular structure, a carbon atom in a hydrocarbon molecule that shares a double bond with another carbon atom.

**Unsaturated or Vadose Zone** - The area above the water table where the soil pores are not fully saturated, although some water may be present.

**U.S. Fish and Wildlife Service (USFWS)** - The federal agency that is the listing authority for species other than marine mammals and anadromous fish under the ESA.

**Vehicle** - An inert ingredient (usually a liquid) used as a medium for suspending or dissolving the pesticidal active ingredient. Commonly used vehicles include water, acetone, and corn oil.

**Viability** - Ability of a wildlife or plant population to maintain sufficient size to persist over time in spite of normal fluctuations in numbers, usually expressed as a probability of maintaining a specific population for a specified period (USDA, USDI 1994a).

**Viable Population** - A wildlife or plant population that contains an adequate number of reproductive individuals appropriately distributed on the planning area to ensure the long-term existence of the species (USDA, USDI 1994a).

**Volatile** - Referring to compounds or substances that have a tendency to vaporize. A material that will evaporate quickly.

**Weak acid** - an acid that is not substantially dissociated at a neutral pH. Many herbicides as

well as many naturally occurring organic chemicals are weak acids. Mammals have well developed systems to excrete weak acids.

**Weed** - “A plant growing where man does not want it to grow” (R.Daubenmire, 1978).

**Well distributed** - Distribution sufficient to permit normal biological function and species interactions, considering life history characteristics of the species and the habitats for which it is specifically adapted.

**Wetlands** - an area that is regularly saturated by surface or ground water and subsequently is characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include swamps, bogs, fens, marshes, and estuaries.

**Wilderness** - Areas designated by Congressional action under the 1964 Wilderness Act. Wilderness is defined as undeveloped federal land retaining its primeval character and influence without permanent improvements or human habitation. Wilderness areas are protected and managed to preserve their natural conditions, which generally appear to have been affected primarily by the forces of nature with the imprint of human activity substantially unnoticeable; have outstanding opportunities for solitude or for a primitive and confined type of recreation; include at least 5,000 acres or are of sufficient size to make practical their preservation, enjoyment, and use in an unimpaired condition; and may contain features of scientific, educational, scenic, or historical value as well as ecological and geologic interest (USDA, USDI 1994a).

**Wildfire** - An unwanted wildland fire. This term is included to give continuing credence to the to the historic fire prevention products. This is NOT a separate type of fire. (Interagency Implementation Guide, 1998).

**Wildland Fire** - Any nonstructure fire, other than prescribed fire, that occurs in the wildland. This term encompasses fires previously called both wildfires and prescribed natural fires. (Interagency Implementation Guide, 1998).

**Wildland Fire Suppression** - An appropriate management response to wildland fire that results in curtailment of fire spread and eliminates all identified threats from the particular fire. All wildland fire suppression activities provide for firefighter and public safety as the highest consideration, but minimize loss of resource values, economic expenditures, and/or the use of critical firefighting resources. (Interagency Implementation Guide, 1998).

**Wildland Fire Use** - The management of naturally ignited wildland fires to accomplish specifically pre-stated resource management objectives in predefined geographic areas outlined in fire management plans (FMP). Operational management is described in wildland fire implementation plans (WFIP). Wildland fire use is not to be confused with “fire use”, which is defined as, the combination of wildland fire use and prescribed fire application to meet resource objectives. (Interagency Implementation Guide, 1998).

**Xenobiotic** - term for non-naturally occurring or man-made substances found in the

environment.

**Zooplankton** - tiny aquatic animals that fish feed on.

## Glossary Bibliography

A large number of environmental glossaries are available on the Internet. The current glossary is based on previous glossaries in various Forest Service risk assessments as well as three glossaries available publicly on the internet: The University of Washington, Forest Soils Home Page (<http://soilslab.cfr.washington.edu/S-7/envglossary.html>), the U.S. EPA (<http://www.epa.gov/OCEPAterms>), and the National Safety Council: (<http://www.nsc.org/ehc/glossary.htm>). The entries taken from these three sites are only those terms that may be relevant to and helpful in the review of the Forest Service risk assessments. For a more extensive series of definitions, the above links should be consulted directly. Following is a list of bibliographic references in addition to those referenced above.

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