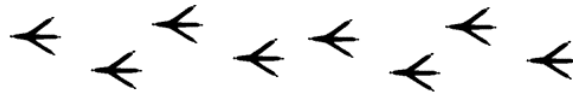


## LIST OF ACRONYMS

ALEA	Aquatic Lands Enhancement Account
BMP	Best Management Practices
BPA	Bonneville Power Administration
CAO	Critical Area Ordinance
CAPS	Contracts and Projects System (WDFW)
CARA	Conservation and Reinvestment Act of 1999
CBFWA	Columbia Basin Fish and Wildlife Authority
CCA	Candidate Conservation Agreement
CCMP	Comprehensive Conservation and Management Plan
CCP	Comprehensive Conservation Plan
CRMP	Comprehensive Resource Management Plan
CRP	Conservation Reserve Program
CWCS	Comprehensive Wildlife Conservation Strategy
DPS	Distinct Population Segment
EA	Ecoregional Assessment
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
FPA	Forest Protection Act
GAP	Gap Analysis Program
GDU	Genetically Distinct Unit
GIS	Geographic Information Systems
GMA	Growth Management Act
HCP	Habitat Conservation Plan
IAFWA	International Association of Fish and Wildlife Agencies
ICBEMP	Interior Columbia Basin Ecosystem Management Project
IPM	Integrated Pest Management
IWJV	Intermountain West Joint Venture
NAFTA	North American Free Trade Agreement
NEP	National Estuary Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service

PBDEs	Polybrominated Diphenyl Ethers (fire retardants)
PBTs	Persistent Bioaccumulative Toxins
PCBs	Polychlorinated Biphenyls
PEI	Pacific Education Institute
PHS	Priority Habitats and Species
PSNERP	Puget Sound Nearshore Ecosystem Restoration Project
RHA	Riparian Habitat Area
RMZ	Riparian Management Zone
SGCN	Species of Greatest Conservation Need
SMA	Shoreline Management Act
SSHIAP	Salmon & Steelhead Habitat Inventory & Assessment Project
SWG	State Wildlife Grants
TDR	Transfer of Development Rights
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
WAC	Washington Administrative Code
WADNR	Washington Department of Natural Resources
WDFW	Washington Department of Fish and Wildlife
WHROW	<i>Wildlife Habitat Relationships in Oregon and Washington</i> (Johnson & O'Neil 2000)
WNHP	Washington Natural Heritage Program
WWRP	Washington Wildlife and Recreation Program

## GLOSSARY



**Abiotic:** Non-living components of an ecosystem; basic elements and compounds of the environment.

**Adaptive management:** An adaptive approach to management where we use the best scientific knowledge and technologies, clearly recognize knowledge gaps, build shared expectations among those who have a stake in ecosystem outcomes, monitor actions, and adjust management actions accordingly.

**Algae:** The common name for the relatively simple type of unicellular or multicellular plant which is never differentiated into root, stem and leaves, contains chlorophyll *a* as its photosynthetic pigment, has no true vascular system, and has no sterile layer of cells surrounding its reproductive organs.

**Alluvial:** Pertaining to river and stream deposits.

**Alluvial soil:** Soil formed in material deposited by the action of running water, such as a floodplain or delta.

**Alpine tundra:** A treeless region above the treeline of high mountains, characterized by cold winters and short, cool summers and having permafrost below a surface layer that may melt in summer.

**Amphipod:** Any of a large order of small, usually aquatic crustaceans with a laterally compressed body, for example, beach fleas.

**Anadromous:** Referring to the life cycle of fishes, such as salmon, in which adults travel upriver from the sea to breed, usually returning to the area where they were born.

**Anaerobic:** Referring to an environment in which oxygen is absent, or to a process which occurs only in the absence of oxygen, or to an organism that lives, is active, or occurs on the absence of oxygen, such as some yeasts or bacteria.

**Annelids:** Any of a phylum (Annelida) of usually elongated, segmented coelomate invertebrates, such as earthworms, various marine worms, and leeches.

**Anoxic:** Greatly deficient in oxygen; oxygenless.

**Anthropogenic:** Of, relating to, or resulting from the influence of humans on nature.

**Aquaculture:** The cultivation or farming of aquatic organisms such as fish and shellfish under captive conditions for purposes of human consumption.

**Aquatic ecosystem:** Any body of water such as a stream, lake or estuary, and all organisms and nonliving components within it, and functioning as a natural system.

**Aquatic integrity:** A mosaic of well connected, high-quality water and habitats that support a diverse assemblage of native and desired non-native species, the full expression of potential life histories and taxonomic lineages, and the taxonomic and genetic diversity necessary for long-term persistence and adaptation in a variable environment.

**Arboreal:** Living in the canopies of trees.

**Archaeobacteria:** A taxonomic kingdom of bacteria, including sulphur-dependent bacteria, methane-producing bacteria, and halophilic bacteria.

**Areas of environmental concern:** Areas within the public lands where special management attention is required (when such areas are developed or used or where no development is required) to protect and prevent irreparable damage to important natural systems or processes, or to protect life and safety from natural hazards.

**Arthropod:** Invertebrate animals with a segmented body and jointed appendages, for example, spiders, bees and crabs.

**Aspect:** The direction a slope faces with respect to the cardinal compass points.

**Association:** A stable grouping of two or more plant species that characterize or dominate a type of biotic community.

**Autecology:** A subdivision of ecology that deals with the relationship of individuals of a species to their environment.

**Avalanche chute:** An area where periodic snow or rockslides prevent the establishment of forest conditions; typically shrub and herb dominated.

**Avian:** Relating to or derived from birds.

**Avifauna:** The birds of a specific region or period.

**Barrens:** A level area with poor, usually sandy or serpentine soils that is sparsely forested or unable to support normal vegetative cover and that generally has a low level of productivity. Barrens are frequently dominated by specialized groups of endemic plants.

**Benthic:** Occurring at the bottom of a body of water, for example, a seabed, riverbed, or lake bottom.

**Benthos:** In freshwater and marine ecosystems, the collection of organisms both attached to or resting on the bottom sediments and burrowed into the sediments.

**Bioaccumulation:** The process by which chemical contaminants become more concentrated in the tissues of organisms as they pass higher up the food chain. Heavy metals and pesticides such as DDT are stored in the fatty tissues of animals and are passed along to predators of those animals. The resulting concentrations eventually reach harmful levels in predators at the top of the food chain.

**Biodiversity:** The variety of organisms considered at all levels, from genetic variants belonging to the same species through arrays of genera, families and still higher taxonomic levels, includes the variety of ecosystems, that comprise both the communities of organisms within particular habitats and the physical conditions under which they live.

**Biogeographic:** The spatial distribution patterns of organisms in relation to change through time (paleoecological, historical, current, and future).

**Biogeographical region:** Any geographical region characterized by distinctive flora or fauna (such as a biome or an ecoregion).

**Biogeography:** The science that deals with the geographical distribution of animals and plants.

**Biological diversity:** The full variety of living organisms and their assemblages; the genetic variation within and between populations of species, and the many processes that link organisms and their physical environments into ecological systems.

**Biomass:** The total mass of all living organisms or of a particular set of organisms in an ecosystem or a trophic level in a food chain; usually expressed as a dry weight or as the carbon, nitrogen, or caloric content per unit area.

**Biome:** A major regional ecological community characterized by distinctive life forms and principal plant or animal species, such as tropical rain forest, tundra, grassland, or a desert.

**Bioregion:** A territory defined by a combination of biological, social, and geographic criteria, rather than geopolitical considerations; generally, a system or related, interconnected ecosystems.

**Biota:** The plants and animals of a specific region or period, or the total aggregation of organisms, in the biosphere.

**Bivalve:** A mollusk whose body is enclosed by two hinged valves or shells.

**Blowdown:** An extensive toppling of trees by wind within a relatively small area that significantly alters the small-scale climate within the ecosystem.

**Boreal forest:** The circumpolar, subarctic forest of high northern latitudes that is dominated by conifers. It is found south of the tundra in the Northern Hemisphere and often contains peaty or swampy areas.

**Brackish:** Water that is saline but not as salty as seawater.

**Braided channel:** A stream consisting of a network of interlacing small channels separated by bars, which may be vegetated and stable or barren and unstable.

**Breeding Bird Survey:** The North American Breeding Bird Survey (BBS) begun in 1966 to collect standardized data on bird populations along more than 3,400 survey routes across the continental United States and southern Canada for more than 250 species.

**Broad scale:** Encompassing a wide area.

**Brood parasitism:** The laying of eggs by one bird species in the nest of another bird species and the subsequent brooding of the egg and raising of the young by the parasitized host, usually to the detriment of the host's young.

**Bunchgrass:** Any of several grasses, especially of the western United States, that grow in tufts rather than forming turf, for example, the genus *Andropogon*.

**Calcareous:** Consisting of or containing calcium carbonate; a soil rich in calcium salts, derived from limestone or chalk. Also, an organism which has an affinity for such an alkaline or basic soil.

**Candidate species:** A species being considered for listing as a federally or state listed endangered or threatened species.

**Canopy:** A layer of foliage in a forest stand; most often refers to the uppermost layer of foliage.

**Canopy closure:** The degree to which the canopy blocks sunlight or obscures the sky. It can only be accurately determined from measurements taken under the canopy, as openings in the branches and crowns must be accounted for.

**Carrying capacity:** The maximum population of a given organism that a particular environment or habitat can sustain; implies continuing yield without environmental damage, often denoted as *K*.

**Catchment:** The area drained by a river or body of water.

**Cetacean:** Any of an order of aquatic, mostly marine mammals that include the whales, dolphins, porpoises, and related forms.

**Channelization:** The straightening of rivers or streams by means of an artificial channel.

**Chlorofluorocarbons (CFCs):** A group of gaseous compounds that contain carbon, chlorine, fluorine, and sometimes hydrogen, and are aerosol propellants and in the manufacture of plastic foams. Also referred to as greenhouse gases.

**Cirque:** A steep hollow, often containing a small body of water, found at the upper end of a mountain valley.

**Clearcut:** An area where the entire stand of trees has been removed in one cutting.

**Climate:** Generalized statement of the prevailing weather conditions at a given place, based on statistics of a long period of record. Includes seasonality of temperature and moisture.

**Climax:** The final stage of succession in an ecosystem. Also a community that reached a steady state under a particular set of environmental conditions.

**Coarse filter:** Refers to the communities or ecological systems which, if protected in sufficient quantity, should conserve the vast majority of species in the ecoregion.

**Coarse woody debris (CWD):** Portion of a tree that has fallen or been cut and left in the woods. Usually refers to pieces at least 20 inches in diameter.

**Cohort:** Individuals all resulting from the same birth-pulse, and thus all of the same age.

**Commensal:** Referring to the relationship between two kinds of organisms in which one obtains food or other benefits from the other without damaging or benefiting it.

**Community:** Any grouping of populations of different organisms that live together in a particular environment.

**Connectivity:** Condition in which the spatial arrangement of land cover types allows organisms and ecological processes (such as disturbance) to move across the landscape. Connectivity is the opposite of fragmentation.

**Conservation biology:** The body of knowledge that deal with the careful protection, utilization and planned management of living organisms and their vital processes to prevent their depletion, exploitation, destruction, or waste.

**Conservation strategy:** A management plan for a species, group of species, or ecosystem that prescribes standards and guidelines that if implemented provide a high likelihood that the species, groups of species or ecosystem, with its full complement of species and processes, will continue to exist well-distributed throughout a planning area, i.e. a viable population.

**Continental shelf:** The shallow, gradually sloping seabed around a continental margin not usually deeper than 650 feet and formed by submergence of part of a continent.

**Copepods:** any of a large subclass (Copepoda) of usually minute freshwater and marine crustaceans that form an important element of the plankton in the marine environment and in some fresh waters.

**Corridor:** A more or less contiguous connection between landmasses or habitats; a migration route that allows more or less uninhibited migration of most of the animals of one faunal region to another. In terms of conservation biology, a connection between habitat fragments in a fragmented landscape.

**Cover:** Vegetation used by wildlife for protection from predators, to mitigate weather conditions, or to reproduce. May also refer to the protection of soil and the shading provided to herbs and forbs by vegetation.

**Critical habitat:** Under the Endangered Species Act, critical habitat is defined as the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species and that may require special management considerations or protection, and specific areas outside the geographic area occupied by a listed species when it is determined that such areas are essential for the conservation of the species.

**Crosswalk:** A comparison of two different vegetation or habitat classification systems and resolving the differences between them to form a common standard.

**Crown fires:** Fires that spread from tree crown to tree crown, usually indicative of particularly hot (high intensity) fires in dry conditions.

**Crustacean:** Any of a large class (Crustacea) of mostly aquatic mandibulate arthropods that have a chitinous or calcareous and chitinous exoskeleton, a pair of often modified appendages on each segment, and two pairs of antennae; includes lobsters, shrimps, crabs, wood lice, water fleas, and barnacles.

**Cyanobacteria:** A large and varied group of bacteria that possess chlorophyll *a* and which carry out photosynthesis in the presence of light and air, producing oxygen. They were

formerly regarded as algae and were called "blue-green" algae. The group is very old, and cyanobacteria are believed to have been the first oxygen-producing organisms on Earth.

**Deciduous:** Plants having structures that are shed at regular intervals or at a given stage in development, such as trees that shed their leaves seasonally.

**Declining:** Species that have exhibited significant, long-term reduction in habitat/and or numbers, and are subject to continuing threats in the ecoregion or state.

**Defoliators:** Insects that feed on foliage and act to remove some or all of the foliage from a tree, shrub or herb.

**Degradation:** The breaking down of a substance into smaller or simpler parts, usually by erosion.

**Delta:** An alluvial deposit at the mouth of a river or tidal inlet. Deltas occur when a sediment-laden current enters an open body of water, at which point there is a reduction in the velocity of the current, resulting in rapid deposition of the sediment, as at the mouth of a river where the river discharges into the sea or a lake.

**Demersal:** Living at or near the sea floor but having the capacity for active swimming.

**Demography:** The quantitative analysis of population structure and trends; population dynamics.

**Desertification:** The process by which an area or region becomes more arid through loss of soil and vegetative cover. The process is often accelerated by excessive, continuous overstocking and drought.

**Detritus:** Debris or waste material, usually organic, such as dead or partially decayed plants and animals, often important as a source of nutrients; or small particles of minerals from weathered rock, such as sand and silt.

**Dewatering:** The removal of water from a stream/river network, typically for irrigation, industrial or human use; commonly changes a network that developed by concentrating flows from stream/river branches to mainstems, to mainstems branching to canals, which reduces the flow in the mainstems.

**Disjunct:** Distinctly separate; a discontinuous range in which one or more populations are separated from other potentially interbreeding populations by a sufficient distance to preclude gene flow between them.

**Dispersal:** The movement, usually one-way and on any time scale, of plants or animals from their point of origin to another location where they subsequently produce offspring.

**Distributary:** A river branch flowing away from the main stream.

**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.



**Disturbance regime:** The pattern of intervals between disturbance and severity of disturbance. For landscapes, this can be for a given disturbance, such as fire, or for a complex of disturbances.

**Diurnal:** Occurring or active only in daylight.

**Diversity:** The distribution and abundance of different plant and animal communities and species within the area covered by a land and resource management plan.

**Drawdown:** A lowering of the water level in a reservoir or other body of water.

**Ecological approach:** Natural resource planning and management activities that assure consideration of the relationship between all organisms (including humans) and their environment.

**Ecological disequilibrium:** A system that has unequal relationships of inputs and outputs that result in erratic (and unpredictable) successional patterns and associated responses to disturbance.

**Ecological drainage unit (EDU):** aggregates of watersheds that share ecological characteristics. These watersheds have similar climate, hydrologic regime, physiography, and zoogeographic history.

**Ecological element:** The individual constituent of the whole. For example, vegetation patch, stream reach, road, city site, or large snag.

**Ecological function:** The activity or role performed by an organism or element in relation to other organisms, elements or the environment.

**Ecological integrity:** The maintenance of native and desired non-native species and associated processes.

**Ecological process:** A series of actions, changes or functions that produce a resulting condition for biota, elements or the environment. For example, succession, decay, photosynthesis, food chain, fire, drought or flood.

**Ecological succession:** The chronological sequence of vegetation and associated animals in an area; or, continuous colonization, extinction, and replacement of species' populations at a particular site, due either to environmental changes or to the intrinsic properties of the plants and animals.

**Ecological type:** A category of land having a unique combination of potential natural community, soil, landscape features, climate and differing from other ecological types in its ability to produce vegetation and respond to management.

**Ecology:** The relationship of species, including humans, and their environment.

**Ecoregion:** A continuous geographic area in which the environmental complex produced by climate, topography and soil is sufficiently uniform to develop characteristics of potential major vegetation communities.

**Ecoregional assessment target species:** A wildlife species selected by ecoregional assessments as a focus for conservation assessment. For a detailed description of how

target species were selected for each ecoregion, please refer to the ecoregional assessment documents.

**Ecosystem:** A community of organisms and their physical environment that interact as an ecological unit.

**Ecosystem function:** The major processes of ecosystems that regulate or influence the structure, composition and pattern. These include nutrient cycles, energy flows, trophic levels (food chains), diversity patterns in time/space development and evolution, cybernetics (control), hydrologic cycles and weathering processes.

**Ecosystem-based management:** The careful and skillful integration of ecological, economic, social and managerial principles to conserve, enhance, and restore ecosystems (including their functions, processes, constituent species, and productive capacities) to maintain their long-term viability and integrity while seeking desired conditions for uses, products, values and services.

**Ecosystem viability:** The ability to maintain diversity, productivity, resilience to stress health, renewability and/or yields of desired values, resource used, products, or services from an ecosystem while maintaining the integrity of the ecosystem over time.

**Ecosystems approach:** The ecosystem approach embodies three fundamental concepts: designating the physical boundary of the system and its parts; understanding the interactions of the parts as a functioning whole; and understanding the relation between the system and its context (external factors that influence the system and also internal information that must be synthesized to be understood at the scale of the defined system).

**Ecotone:** The boundary or transitional zone between adjacent communities containing the characteristic species of each, such as the edge of a woodland next to a field or lawn.

**Ecotype:** A locally adapted population of a species that has a distinctive limit of tolerance to environmental factors; a genetically uniform population of a species resulting from natural selection by the special conditions of a particular habitat factor.

**Edaphic:** Pertaining to soil or to the physical, chemical, and biological properties of the soil or substratum, which influence associated biota, such as pH and organic matter content.

**Edge effect:** The tendency for a transitional zone between communities (an *ecotone*) to contain a greater variety of species and more dense populations of species than either community surrounding it.

**Element occurrence (EO):** A term originating from the methodology of the Natural Heritage Network that refers to a unit of land or water on which a population of a species or example of an ecological community occurs. For communities, these EOs represent a defined area that contains a characteristic species composition and structure.

**Emergent:** An aquatic plant having most of its vegetative parts above water. Also, a tree that reaches or exceeds the level of the surrounding canopy.

**Encroachment:** Conditions where the succession/disturbance regimes have been changed to allow transition to dominance by species or structures that are not adapted to the biophysical succession/disturbance regime.

**Endangered species:** Any species which is in danger of extinction throughout all of its range; a species that is federally listed as Endangered by the U.S. Fish and Wildlife Service under the Endangered Species Act.

**Endemic:** Belonging or native to a particular people or geographic region; a genetically unique life form.

**Environment:** The complex of climatic, soil and biotic factors that act upon an organism or ecological community and ultimately determine its form and survival.

**Ephemeral streams:** Streams that contain running water only sporadically, such as during and following storm events.

**Epipelagic:** The oceanic zone extending from the surface to about 650 feet, where enough light penetrates to allow photosynthesis.

**Epizootic:** An outbreak of disease (an epidemic) in nonhuman animals, or pertaining to such an outbreak.

**Equilibria/Equilibrium:** A system that has cyclic successional patterns or multiple stable states, and associated response in disturbances.

**Estuary:** A semi-enclosed coastal body of water that has a free connection with the open sea and where fresh water derived from land drainage (usually mouths of rivers) is mixed with seawater; often subject to tidal action and cyclic fluctuations in salinity.

**Eutrophication:** The process by which a body of water acquires a high concentration of nutrients, especially phosphates and nitrates, which typically promote excessive growths of algae, decomposition of which depletes oxygen, causing the death of other organisms.

**Exotic species:** Species that occur in a given place, area or region as the result of direct or indirect, deliberate or accidental introduction by humans, permitting the species to cross a natural barrier to dispersal.

**Extinction:** The dying out of a species, or the condition of having no remaining living members; also, the process of bringing about such a condition.

**Extirpation:** The loss or removal of a species from one or more specific areas but not from all areas.

**Fauna:** The animal life of a region or geological period.

**Fen:** A marshy, low-lying wetland covered by shallow, usually stagnant, and often alkaline water that originates from groundwater sources.

**Feral:** Relating to plants or animals which have escaped from domestication, and to their descendants.

**Fine filter:** Species of concern or rare communities that complement the coarse filter, helping to ensure that the coarse filter strategy adequately captures the range of viable native species and ecological communities. Endangered or threatened, declining, vulnerable, wide-ranging, very rare, endemic and keystone species are some potential fine filter targets.

**Fire regime:** The characteristic frequency, extent, intensity, severity and seasonality of fires in an ecosystem.

**Fluvial:** Pertaining to rivers or streams and their action.

**Forb:** An herbaceous plant that is not a grass.

**Fragmentation:** Breaking up of contiguous areas into progressively smaller patches of increasing degrees of isolation.

**Gallery forest:** A narrow strip of forest along the margins of a river in an otherwise unwooded landscape.

**Gap analysis:** The process of identifying and classifying components of biological diversity to determine which components already occur in protected areas and which are not present or are under-represented in protected areas.

**GAP (National Gap Analysis Program):** Gap analysis is a scientific method for identifying the degree to which native animal species and natural communities are represented in the present-day mix of conservation lands. Those species and communities not adequately represented in the existing network of conservation lands constitute conservation "gaps". The purpose of the Gap Analysis Program (GAP) is to provide broad geographic information on the status of ordinary species (those not threatened with extinction or naturally rare) and their habitats in order to provide land managers, planners, scientists and policy makers with the information they need to make better-informed decisions.

**Gastropod:** Any of a large class (Gastropoda) of mollusks, usually with a univalve shell or no shell and a distinct head bearing sensory organs, such as snails and slugs.

**Geographic Information System (GIS):** A spatial type of information management system that provides for the entry, storage, manipulation, retrieval, and display of spatially oriented data.

**Geomorphology:** The study of landforms on a planet's surface and of the processes that have fashioned them.

**Global rank:** An assessment of a biological element's relative imperilment and conservation status across its geographic distribution, ranging from G1 (critically imperiled) to G5 (secure). Assigned by the Natural Heritage Network, global ranks for species and communities are determined by the number of occurrences or total area of coverage (communities only), modified by other factors such as condition, historic trend in distribution or condition, vulnerability, and impacts.

**Graminoids:** Grasses and grass-like plants such as sedges.

**Groundfish:** A bottom-dwelling fish, especially one of commercial importance such as cod, haddock, pollock or flounder.

**Guild:** A group of species having similar ecological resource requirements and foraging strategies and therefore having similar roles in the community.

**Habitat:** The place, including physical and biotic conditions, where a plant or animal usually occurs.

**Habitat connections:** A network of habitat patches linked by areas of like habitat. The linkages connect habitat areas within the watershed to each other and to areas outside the watershed. These connections include riparian areas, mid-slopes, and ridges. In the case of old growth forest habitat connections, each connection is planned to be sufficiently wide (at least 1,000 feet) to retain interior old growth-associated species.

**Habitat fragmentation:** The breaking up of a habitat into unconnected patches interspersed with other habitat, which may not be inhabitable by species occupying the habitat that was broken up. The breaking up is usually by human action, as, for example, the clearing of forest or grassland for agriculture, residential development, or overland electrical lines.

**Habitat type:** Place where an animal or plant normally lives, often characterized by a dominant plant for or physical characteristic.

**Heterogeneity:** Variation in the environment over space and time.

**Heterogeneous:** consisting of diverse or dissimilar parts; having non-uniform structure or composition.

**Hibernacula:** Plural of hibernaculum, a protective covering or structure, such as a cave or tree cavity, in which an animal remains dormant for the winter.

**Historic:** The approximate 1,000-year time period prior to Euro-American settlement (substantial effects in Washington assumed to have begun by the mid-1800s).

**Holocene:** The present, post-Pleistocene geologic epoch of the Quaternary period, including the last 10,000 years; the most recent postglacial period.

**Home range:** The geographic area within which an animal restricts its normal, daily activities.

**Human dimension:** An integral component of ecosystem management that recognizes people are part of ecosystems, that people's pursuits of past, present and future desires, needs and values have and will continue to influence ecosystems and must be included in ecosystem management.

**Hybridization:** Any crossing of individuals of different genetic composition, often belonging to separate species, resulting in hybrid offspring.

**Hydrological cycle:** The movement of water from the sea through the air to the land and back to the sea.

**Hydrology:** The study of the movement of water from the sea through the air to the land and back to the sea; the properties, distribution and circulation of water on or below the Earth's surface and in the atmosphere.

**Hypoxic:** Deficient in oxygen.

**Impact:** The combined concept of ecological stresses to a target and the sources of that stress to the target. Impacts are described in terms of severity and urgency.

**Impoundment:** A natural or artificial body of water held back by a dam.

**Indicator species:** An organism whose presence or state of health is used to identify a specific type of biotic community or as a measure of ecological conditions or changes occurring in the environment.

**Indigenous:** A species that occurs naturally in an area; native.

**Integrated pest management (IPM):** A pest management philosophy based on an understanding of natural habitat growth and development, habitat pest dynamics, and the interaction of the two.

**Integrated resources management (IRM):** The simultaneous consideration of ecological, physical, economic and social aspects of lands, waters and resources in developing and carrying multiple-use, sustained-yield management.

**Intermittent stream:** Any non-permanent flowing drainage feature having a definable channel and evidence of scour or deposition. This includes what are sometimes referred to as ephemeral streams if they meet these two criteria.

**Intertidal:** Relating to the littoral zone above the low-tide mark.

**Invertebrate:** An animal without a backbone, such as snails, worms and insects.

**Karst:** A limestone landscape characterized by sinks, underground streams and caverns.

**Keystone species:** Organisms that play dominant roles in an ecosystem and affect many other organisms. The removal of a keystone predator from an ecosystem causes a reduction of the species diversity among its former prey.

**Krummholz:** A discontinuous belt of stunted forest or scrub typical of windswept alpine regions close to treeline; a wind-deformed tree at high elevations.

**Lacustrine:** Pertaining to or living in lakes or ponds.

**Landscape:** A spatially heterogeneous area with repeating patterns of elements and associated disturbance regimes, with similar climate and geomorphology.

**Landscape connectivity:** The spatial contiguity within the landscape; a measure of how easy or difficult it is for organisms to move through the landscape without crossing habitat barriers.

**Landscape ecology:** The relationships of structure, function and change in a heterogeneous land area composed of interacting ecosystems. Structure, function and

change refer to the patterns and processes of terrestrial, aquatic, hydrologic, social and economic systems across space and through time.

**Lek:** A mating system among birds during which males display communally at a traditional site (one used year after year), for example, sage-grouse.

**Lentic:** Related to still waters such as ponds, lakes or swamps.

**Levee:** A raised embankment along the edge of a river channel, often constructed as protection against flooding. Natural levees result from periodic overbank flooding, when coarser sediment is immediately deposited because of a reduction in river velocity.

**Lichen:** A composite organism consisting of a fungus and algae or cyanobacteria living in symbiotic association.

**Life history:** The significant features of the life cycle through which an organism passes, with particular reference to strategies influencing survival and reproduction.

**Linkages:** Route that permits movement of individual animals from one habitat type to another similar habitat type.

**List of endangered or threatened species:** A listing of animals and plants administratively determined to meet legal criteria for protection under provisions of the U.S. Endangered Species Act.

**Littoral zone:** The biogeographic zone in a body of fresh water where light penetration is sufficient for the growth of plants; the intertidal zone of the seashore.

**Loess:** Unconsolidated sediment deposited by wind. Loess is usually composed of unstratified fine sand or silt.

**Lotic:** Relating to or living in moving water, such as a river or stream.

**Macroclimate:** Climate that lies just beyond the modifying irregularities of landform and vegetation.

**Macrofauna:** Animals large enough to be seen with the naked eye.

**Management disturbances:** Intentional, planned human disturbance that changes the structure and composition of a landscape element, landscape pattern, or regional composition, such as timber harvest, thinning, range improvement, livestock grazing, prescribed fire, planned ignition, fire suppression, etc.

**Marine protected areas (MPAs):** Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment (IUCN 1988).

**Marsh:** An ecosystem of more or less continuously waterlogged soil dominated by emergent herbaceous plants but without a surface accumulation of peat. A marsh differs from a swamp in that it is dominated by rushes, reeds, cattails and sedges, with few if any woody plants, and differs from a bog in having soil rather than peat at its base.

**Matrix:** The most extensive and most connected landscape element type present, which plays the dominant role in landscape functioning. Also a landscape element surrounding a patch.

**Mature forest:** Generally used in an economic sense to indicate that a forest has attained harvest age.

**Maximum sustainable yield:** The maximum yield or crop which may be harvested year after year without damage to the system, or the theoretical point at which the size of a population is such as to produce a maximum rate of increase.

**Megafauna:** The largest size category of animals in a community.

**Meiofauna:** That part of the microfauna that inhabits algae, rock fissures, and superficial layers of the muddy sea bottom. They are smaller than 1 millimeter but larger than 0.1 millimeter.

**Mesic:** Neither wet (hydic) nor dry (xeric); intermediate in moisture, without extremes.

**Metapopulation:** A group of populations, usually of the same species, which exist at the same time but in different places.

**Microclimate:** The climate that prevails in a small area, usually in the layer near the ground.

**Mollusk:** An organism in the phylum Mollusca (for example snails, clams, or squids), characterized by soft, unsegmented body parts enclosed in a shell.

**Monitor species:** Washington State monitor species are those that require management, survey, or data emphasis for one or more of the following reasons: 1) they were classified as endangered, threatened, or sensitive within the previous five years; 2) they require habitat that is of limited availability during some portion of their life cycle; 3) they are indicators of environmental quality; and 4) there are unresolved taxonomic questions that may affect their candidacy for listing as endangered, threatened or sensitive species.

**Monitoring:** A process of collecting information to evaluate whether objectives of a management plan are being realized.

**Montane:** Of, relating to, growing in, or being the biogeographical zone of relatively moist, cool upland slopes below the timberline, often dominated by large coniferous trees.

**Moraine:** An accumulation of boulders, stones or other debris carried and deposited by a glacier.

**Mosaic:** Heterogeneous ecological conditions on a landscape usually produced by the variable, patchy effects of disturbances: a patchwork of vegetation communities within a landscape as determined by environmental conditions.

**Native:** Plants or animals that are indigenous to a given place; the pre-Euro-American settlement system.



**Natural conditions:** Plant and animal communities where humans have not directly impacted either the plant community or the soil by such activities as logging, grazing or cultivation.

**Natural variability:** Range of the spatial, structural, compositional and temporal characteristics of ecosystem elements during a period specified to represent “natural” conditions.

**Nearshore marine zone:** The area of the marine environment extending from the supratidal area above the ordinary or mean high water line to the subtidal area. In the Puget Trough ecoregion, the nearshore marine area extends below to –130 feet, because beyond that depth data were less available. This also approximates the photic zone, or depth of macrophytes.

**Neotropical migrant:** A bird that nests in temperate regions and migrates to the Neotropical faunal region, which includes the West Indies, Mexico, Central America, and that part of South American within the tropics.

**Nonnative (also exotic, introduced, and alien):** A plant or animal that is not native to the area in which it occurs; it was either purposely or accidentally introduced.

**Nonpoint:** Not from a single, well-defined site. Nonpoint sources are pollution-producing entities not tied to a specific origin, such as an individual smokestack; including runoff, which washes pollutants from roads into storm sewers and bodies of water or agricultural chemicals from lawns, fields and golf courses.

**Obligate:** Essential, necessary; unable to exist in any other state, mode or relationship; restricted to one particularly characteristic mode of life.

**Obligate species:** A plant or animal that occurs only in a narrowly defined habitat such as a tree cavity, rock cave, or wet meadow.

**Old growth:** Referring to an ecosystem or community, particularly a forest, which has not experienced intense or widespread disturbance for a long time relative to the life spans of the dominant species and that has entered a late successional stage; usually associated with high diversity of species, specialization, and structural complexity.

**Oligotrophic:** Waters or soils that are poor in nutrients and have low primary productivity.

**Overgrazing:** Continued heavy grazing that exceeds the recovery capacity of the plant community and creates a deteriorated range.

**Palustrine:** Pertaining to wet or marshy habitats.

**Parasite:** An organism that is intimately associated with and metabolically dependent on another living organism (the host) for completion of its life cycle, and which is typically detrimental to the host.

**Patch:** Ecosystem elements (e.g. areas of vegetation) that are relatively homogeneous internally and that differ from what surrounds them.

**Patch dynamics:** The idea that communities are a mosaic of different areas (patches) within which nonbiological disturbances (such as climate) and biological interactions proceed.

**Pathogen:** A specific causative agent of a disease, such as a bacterium or a virus.

**Pelagic:** Referring to or occurring in the open sea.

**Perennial stream:** A stream that typically has running water on a year-round basis.

**Peripheral:** A species or community that only occurs near the edges of an ecoregion or state and is primarily located in other ecoregions or states.

**Physiographic province:** A region of the landscape with distinctive geographical features.

**Physiography:** Landform; physical geography.

**Pioneer:** The first species or community to colonize or recolonize a barren or disturbed area, thereby commencing a new biological succession.

**Plant association:** Stands of vegetation with similar combinations of species united into abstract types; a basic unit in plant community classification.

**Playa:** A nearly level area at the bottom of an undrained desert basin, sometimes temporarily covered with water during wet periods. Playas are barren and usually saline.

**Pleistocene:** The earlier epoch of the Quaternary period or the corresponding system of rocks; 1.6 million to 10,000 years ago; the "Ice Age".

**Pluvial:** Characterized by abundant rain.

**Polychlorinated biphenyls (PCBs):** A group of toxic, carcinogenic organic compounds containing more than one chlorine atom; very stable compounds, fat-soluble; they therefore accumulate in ever-higher concentrations as they move up the food chain.

**Population:** A group of individuals of a species living in a certain area that maintains some degree of reproductive isolation.

**Population dynamics:** The aggregate of changes that occur during the life of a population. Included are all phases of recruitment and growth, senility, mortality, seasonal fluctuation in biomass, and persistence of each year class and its relative dominance, as well as the effects that any or all of these factors exert on the population.

**Population viability:** Probability that a population will persist for a specified period across its range despite normal fluctuations in population and environmental conditions.

**Prescribed fire:** A fire burning under specified conditions that will accomplish certain planned objectives. The fire may result from planned or unplanned ignitions.

**Province:** An area of land, less extensive than a region, having a characteristic plant and animal population.

**Range:** The area or region over which an organism occurs.

**Rangeland:** Land on which the native vegetation is predominantly grasses, grass-like plants, forbs or shrubs. Includes lands revegetated naturally or artificially when routine management of that vegetation is accomplished mainly through manipulation of grazing.

**Recovery plan:** A plan that lists the actions that must be taken and the objectives that must be reached before an organism is no longer endangered or threatened and may be removed from the list of endangered and threatened species.

**Regime:** A regular pattern of occurrence or action.

**Region:** The broadest scale of landscape ecology composed of a coarse-grained pattern of connected landscapes with contrasting boundaries that have a similar macroclimate and sphere of human activity and interest.

**Relict:** Persistent remnants of a formerly widespread species surviving in an environment that has undergone considerable change.

**Resilience:** The ability of an ecosystem to maintain diversity, integrity and ecological processes following disturbance.

**Restoration, ecological:** The reestablishment of pre-disturbance functions and related chemical, biological and hydrological characteristics.

**Restoration, passive:** The discontinuation of those activities that are causing degradation or preventing the ecosystem's recovery.

**Riparian:** Relating to, living, or located on the bank of a natural watercourse (such as a river) or sometimes of a lake or tidewater.

**Riparian ecosystem:** Ecosystems transitional between terrestrial and aquatic ecosystems. Also, streams, lakes, wet areas and adjacent vegetation communities and their associated soils that have free water at or near the surface.

**Riparian zone:** An area of vegetation adjacent to an aquatic ecosystem. It has a high water table, certain soil characteristics, and some vegetation that requires free (unbound chemically) water or conditions that are more moist than normal. This zone is transitional between aquatic and upland zones.

**Riprap:** A general term for large, blocky stones that are artificially placed to stabilize and prevent erosion along a riverbank or shoreline.

**Risk analysis:** A qualitative assessment of the probability of persistence of wildlife species and ecological systems under various alternatives and management options; generally also accounts for scientific uncertainties.

**Rookery:** Breeding or nesting place for some gregarious mammals and birds.

**Runoff:** Precipitation on land that runs off to a body of water.

**Salmonid:** Any of a family of elongate bony fishes (such as salmon or trout) that have the last three vertebrae upturned.

**Sanitation:** The removal of dead or damaged trees, or trees susceptible to insect and disease attack, such as intermediate and suppressed trees, essentially to prevent the spread of pest or pathogens and to promote forest health.

**Savanna:** A grassland-woodland mosaic vegetation type with long dry periods and receiving more rainfall than desert areas but not enough to support complete forest cover.

**Sediment:** Materials that sink to the bottom of a body of water or materials that are deposited by wind, water or glaciers.

**Sensitive species:** A species not formally listed as endangered or threatened, but considered to be at risk as evidenced by: a significant current or predicted downward trend in population numbers or density, or a significant current or predicted downward trend in habitat capability that would reduce a species' existing distribution.

**Seral:** Relating to a phase in the sequential development of ecological communities formed in ecological succession in a particular habitat and leading to a particular climax association; intermediate communities in an ecological succession.

**Sere:** The series of stages that follow one another in an ecologic succession; a series of biotic communities that follow one another in time on any given area of the Earth's surface.

**Serotinous cones:** Pinecones that remain on the tree for many years and are tightly closed until stimulated by the heat of a forest fire to open and release seeds.

**Sessile:** Permanently attached to a substrate or established; not free to move about. Also, attached without a stalk.

**Silviculture:** The art and science of managing forest stands to provide or maintain structures, species composition and growth rates that contribute to forest management goals.

**Site:** The classification of land area based on its climate, physiographic (physical geography), edaphic (soil), and biotic factors that determine its suitability and productivity for particular species and silvicultural alternatives.

**Slough:** A swamp, marsh or muddy backwater.

**Smolt:** The stage in the life of salmon and similar fishes in which the subadult individuals acquire a silvery color and migrate down the river to begin their adult lives in the open sea.

**Snag:** A standing dead tree or stump that provides habitat for a broad range of wildlife, from beetle larvae (and the birds that feed upon them) to dens for raccoons.

**Spawn:** The eggs of certain aquatic organisms; also, the act of producing such eggs or egg masses.

**Species:** A group of organisms formally recognized as distinct from other groups; the taxon rank in the hierarchy of biological classification below genus; the basic unit of biological classification, defined by the reproductive isolation of the group from all other groups of organisms.

**Species diversity:** See *Biological diversity*.

**Species richness:** The absolute number of species in an assemblage or community.

**Staging area:** A traditional area, usually a lake, where birds that migrate in flocks rest and feed either immediately before or during migration. Many flocks may be gathered in such an area.

**Stand composition:** The representation of tree species in a forest stand, expressed by some measure of dominance (e.g., percent of volume, number, basal area, cover).

**Stand structure:** The physical and temporal distribution of plants in a stand.

**Steppe:** Specifically, the temperate, semiarid areas of treeless grassland in the mid-latitudes of Europe and Asia; more generally, any such grassland.

**Stewardship:** A land ethic for current and future generations that 1) encourages wise use and conservation of resources; 2) sustains and enhances productivity of resources; and 3) protects resources.

**Stressors:** Physical or biotic factors that stress individual organisms/communities.

**Subalpine:** The zone just below treeline on temperate mountains, usually dominated by a coniferous forest ecologically similar to boreal forest. The elevation of this zone increases with a decrease in latitude.

**Subbasin:** The fourth delineation within the hydrologic unit code system. provides a delineation generally of a river, or group of rivers, that flow into a basin.

**Sublittoral zone:** The deeper zone of a lake below the limit of rooted vegetation; the marine zone extending from the lower margin of the intertidal (littoral) to the outer edge of the continental shelf at a depth of about 650 feet.

**Subsidence:** The process of sinking or settling of a land surface or a crustal elevation because of natural or artificial causes.

**Subspecies:** A race of a species that is granted a taxonomic name; rules for designating subspecies are subjective, but subspecies are generally geographically distinct and form populations (not merely morphs) that differ to some degree from other geographic populations of the species.

**Substrate:** The surface of medium that serves as a base for something.

**Subtidal:** Applied to that portion of a tidal flat environment that lies below the level of mean low water for spring tides. Normally it is covered by water at all states of the tide. Often used as a general descriptive term for a shallow marine depositional environment.

**Succession:** The development of biotic communities following disturbances that produce an earlier successional community.

**Successional stage:** One in a series of usually transitory communities or developmental stages that occur on a particular site or area over a period of time.

**Suitability:** The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternative uses foregone.

**Supratidal:** Area above the mean high water line, such as the top of a bluff or the extent of a salt marsh in the upper intertidal; the upper limit of the nearshore marine zone.

**Sustainability:** The ability to sustain diversity, productivity, resilience to stress, health, renewability and/or yields of desired values, resource uses, products, or services from an ecosystem while maintaining the integrity of the ecosystem over time.

**Sustainable development:** The use of land and water to sustain production indefinitely without environmental deterioration, ideally without loss of native biodiversity.

**Synergistic:** Pertaining to the cooperative action of two or more agencies such that the total is greater than the sum of the component actions; combined action or operation.

**Talus:** Broken rock forming a more or less continuous layer that may or may not be covered by duff and litter.

**Taxon (Taxa):** Any organism or group of organisms of the same taxonomic rank; for example, members of an order, family, genus or species.

**Threatened species:** Any species that is likely to become an endangered species throughout all or a significant portion of its range; a species federally listed as Threatened by the U.S. Fish and Wildlife Service under the Endangered Species Act.

**Threshold:** The boundary between ecological states that, once crossed, is not easily reversible and results in the loss of capacity to produce commodities and satisfy values.

**Topography:** The natural and constructed relief of an area.

**Treeline:** The upper limits of tree growth in mountains or at high latitudes.

**Trophic:** Pertaining to nutrition or to a position in a food web, food chain, or food pyramid.

**Tundra:** A level or rolling treeless plain in the arctic or subarctic regions; the soil is black and mucky, the subsoil is permanently frozen, and the vegetation is dominated by mosses, lichens, herbs and dwarf shrubs. A similar environment occurs in mountainous areas above the timberline.

**Turbid:** Having sediment or foreign particles stirred up or suspended; muddy.

**Umbrella species:** Species that, by being protected, may also protect the habitat and populations of other species.

**Understory:** The vegetation layer between the overstory or canopy and the groundcover of a forest community, usually formed by shade-tolerant species or young individuals of emergent species. May also refer to the groundcover if no tree or shrub layer is present.

**Vertebrate:** An animal with a backbone; includes mammals, birds, reptiles, amphibians, and fishes.

**Viability:** The ability of a species to persist for many generations or an ecological community or system to persist over some time period.

**Viable population:** A population that has adequate numbers and dispersion of reproductive individuals to ensure the continued existence of the species population in the area.

**Vulnerable:** Vulnerable species are usually abundant, may or may not be declining, but some aspect of their life history puts them at risk of decline (e.g., migratory concentration or rare/endemic habitat).

**Watershed:** An area or a region that is bordered by a divide and from which water drains to a particular watercourse or body of water.

**Watershed analysis:** A systematic procedure for characterizing watershed and ecological processes to meet specific management and social objectives. Watershed analysis is a stratum of ecosystem management planning applied to watersheds of approximately 20 to 200 square miles.

**Wetland:** A general term applied to land areas that are seasonally or permanently waterlogged, including lakes, rivers, estuaries and freshwater marshes; an area of low-lying land submerged or inundated periodically by fresh or saline water.

**Widespread:** A species or community typically found in the ecoregion or state, but common in several other ecoregions or states.

**Wilderness:** An area designated by congressional action under the 1964 Protection 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.

**Woodland:** A vegetation community that includes widely spaced large trees. The tree crowns are typically more spreading in form than those of forest trees and do not form a closed canopy. Grass, heath or scrub may develop between the trees.

**Xeric:** Dry; tolerating or adapted to dry conditions.

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