

## GLOSSARY

**Abiotic** Non-living factors that are present in and affect the characteristics of a given ecosystem (StreamNet 2004).

**Abundance** The number of individuals (Lancia et al. 1994); contrast with Density.

**Acclimate** The adaptation of an organism to environmental changes (StreamNet 2004).

**Accuracy** The nearness of a measurement to the actual value of the variable being measured; not synonymous with Precision (Zar 1984:4).

**Action** An activity or program of any kind authorized, funded, or carried out, in whole or in part, by a federal agency in the United States or upon the high seas, such as: (a) an action intended to conserve listed species or their habitat; (b) the promulgation of a regulation; (c) the granting of a license, contract, lease, easement, right-of-way, permit, or grant-in-aid; or (d) an action directly or indirectly causing modification to the land, water, or air (U.S. Fish and Wildlife Service 2005).

**Active floodplain** The low-lying land surface adjacent to a stream and formed under the present flow regime. The active floodplain is inundated at least once or twice (on average) every 3 years (Prichard 1998).

**Adaptation** Changes in an organism's structure or habits that allow it to adjust to its surroundings (StreamNet 2004).

**Adaptive management** A cyclical process (plan, act, monitor, assess, repeat) in which managers treat actions as experiments, from which they improve management actions (Schoonmaker and Luscombe 2005).

**Adfluvial** Possessing a life history trait of migrating between lakes or rivers and streams (StreamNet 2004).

**Aeration** Any active or passive process by which intimate contact between air and liquid is assured, generally by spraying liquid in the air, bubbling air through water, or mechanical agitation of the liquid to promote surface absorption of air (StreamNet 2004).

**Aerobic** Characterizing organisms able to live only in the presence of air or free oxygen, and conditions that exist only in the presence of air or free oxygen. Contrast with Anaerobic (StreamNet 2004).

**Affluent (stream)** A stream or river that flows into a larger one; a tributary (StreamNet 2004).

**Agrochemical** An agricultural chemical (as an herbicide or an insecticide) (Mish 1999).

**Alevin** The developmental life stage of young salmonids and trout that are between the egg and fry stage. The alevin has not absorbed its yolk sac and has not emerged from the spawning gravels (StreamNet 2004).

**Allele** One of a pair of genes at a particular genetic locus (Meffe et al. 1994).

**Algae** Small one-celled, filamentous, or colonial plants, mostly aquatic or found in damp places, containing chlorophyll and other pigments and having no true root, stem, or leaf (Neufeldt and Guralnik 1994).

**Allopatric** Occurring in different geographic regions. See parapatric and sympatric (StreamNet 2004).

**Alluvial** Deposited by running water (StreamNet 2004).

**Alluvial fan** A wide, cone-shaped deposit of rocks, sand, gravel, and finer materials that has been deposited by a stream as it flows out of a mountainous area onto a plain (California Department of Fish and Game 2003).

**Alluvium** Sediment or loose material such as clay, silt, sand, gravel, and larger rocks deposited by moving water (StreamNet 2004).

**Alpine** Barren substrate or herbaceous and low shrubby vegetation above mountain timberline (NatureServe 2005).

**Altricial** Born in a relatively undeveloped condition (eyes closed) and requiring prolonged parental care (Feldhamer et al. 1999).

**Ammocoete** A name applied to the larval form of lampreys (Simpson and Wallace 1978).

**Amphipods** Crustaceans with a vertically thin body, one set of legs for jumping and walking, and one set of legs for swimming (Neufeldt and Guralnik 1994).

**Anabranh** A diverging branch of a river which reenters the main stream (StreamNet 2004).

**Anadromous** Fish that hatch in fresh water, migrate to the ocean (salt water) to grow and mature, and migrate back to fresh water to spawn and reproduce (StreamNet 2004).

**Anaerobic** Characterizing organisms able to live and grow only where there is no air or free oxygen, and conditions that exist only in the absence of air or free oxygen (StreamNet 2004).

**Annual** Referring to an organism that completes its life cycle from birth or germination to death within a year (Ricklefs and Miller 2000).

**Anthropocentric** Any human-oriented perspective of the environment, but usually used to emphasize a distinction between humans and nonhumans. For example, assessing a tropical forest in terms of its potential timber value would be an exclusively anthropocentric perspective (Meffe et al. 1994).

**Anthropogenic** Caused by humans (Ricklefs and Miller 2000).

**AOU** American Ornithologists' Union.

**Aquaculture** The controlled cultivation and harvest of aquatic plants or animals (e.g., edible marine algae, clams, oysters, and salmon) (StreamNet 2004).

**Aquaduct** A pipe or conduit made for bringing water from a source (StreamNet 2004).

**Aquatic** Growing, living in, or frequenting water, usually open water; compare with wetland (California Department of Fish and Game 2003).

**Aquatic ecosystem** Any body of water, such as a stream, lake or estuary, and all organisms and nonliving components within it, functioning as a natural system (StreamNet 2004).

**Aquatic habitat** Habitat that occurs in free water (StreamNet 2004).

**Aquifer** An underground reservoir of water (California Department of Fish and Game 2003).

**Area/perimeter ratio** The ratio of internal area to edge habitat of a region. The area/perimeter ratio is an indication of the amount of interior habitat with respect to edge habitat, and may indicate potential success of a reserve in protecting interior species (Meffe et al. 1994).

**Arid** Lacking enough water for things to grow; dry and barren (Neufeldt and Guralnik 1994).

**Assemblage** A group of species under study (Morrison and Hall 2002).

**Aspect** A position facing a particular direction (Mish 1999).

**Augmentation (of stream flow)** Increasing stream flow under normal conditions by releasing storage water from reservoirs (StreamNet 2004).

**Avifauna** The birds or the kinds of birds of a region, period, or environment (Mish 1999).

**Background Extinction Rate** Historical rates of extinction due to environmental causes not influenced by human activities, such as the rate of species going extinct because of long-term climate change (Meffe et al. 1994).

**Baseline surveys** Gathering preliminary information on the spatial distribution and/or abundance of habitats or species to place in a larger context of estimates over multiple years (Thompson et al. 1999).

**Batholith** An enormous mass of intrusive igneous rock (California Department of Fish and Game 2003).

**Bedrock** Solid rock that underlies soil and other material on the surface of the earth (California Department of Fish and Game 2003).

**Bioaccumulation** The process in which industrial waste, toxic chemicals, etc. gradually accumulate in living tissue (Neufeldt and Guralnik 1994).

**Biodiversity** Variety in living things in a particular area or region (Neufeldt and Guralnik 1994).

**Biomass** The total quantity (at any given time) of living organisms of one or more species per unit of space (species biomass), or of all the species in a biotic community (community biomass) (StreamNet 2004).

**Biome** (1) A major category of ecological communities based on dominant plant form (e.g., grassland biome) (Ricklefs and Miller 2000). (2) An entire community of living organisms in a single major ecological region (Wisdom et al. 2000).

**Biotics** A customized information management system designed to support the natural heritage methodology used by the NatureServe network. Biotics includes four primary applications, briefly described below. Each application provides a Windows interface and manages data stored within a common Oracle database. The successor to the previous software package, *BCD*, Biotics 4 was released in November 2002 (NatureServe 2005).

**BLM** Bureau of Land Management.

**Block-faulted** Long, narrow, sometimes diamond-shaped, zones called block-faulted belts are marked by strong faulting. These belts occur between pairs of mountain chains as Intermontane Plateaus or as "rift valley" belts that cross the great shields.

These strongly faulted features exhibit the effects of various types of stress that occur within the continent's crust (Encyclopædia Britannica Premium Service 2005a).

**Bog** (1) Freshwater wetlands that are poorly drained and characterized by decaying mosses that form peat (StreamNet 2004). (2) Wetlands with peat or muck substrate resulting from unusual water chemistry; includes sterile rainwater catch-basins and other peatlands (NatureServe 2005).

**Bonneville Power Administration (BPA)** The sole federal power marketing agency in the Northwest and the region's major wholesaler of electricity. Created by Congress in 1937, Bonneville sells power to public and private utilities, direct service customers, and various public agencies in the states of Washington, Oregon, Idaho, Montana west of the Continental Divide (and parts of Montana east of the Divide), and smaller adjacent areas of California, Nevada, Utah, and Wyoming. The Northwest Power Act charges Bonneville with additional duties related to energy conservation, resource acquisition, and fish and wildlife (StreamNet 2004).

**Boreal** Northern; often refers to the coniferous forest regions that stretch across Canada, northern Europe, and Asia (Ricklefs and Miller 2000).

**Boreal forest** A northern forest, as in the boreal forest Biome, characterized by evergreen conifers and long winters. The boreal forest, also referred to as a Taiga, is found in the northern parts of North America, Europe, and Asia (StreamNet 2004).

**Bottleneck** A sharp reduction of a breeding population's size to a few individuals. The genetic consequences of a bottleneck, especially the loss of genetic variability, depend on both its magnitude and its duration (StreamNet 2004).

**Boulder** A large substrate particle that is larger than cobble, >256 mm in diameter (StreamNet 2004).

**Brackish** Having a somewhat salty taste, especially from containing a mixture of seawater and fresh water (StreamNet 2004).

**Braided stream** A complex tangle of converging and diverging stream channels (Anabranches) separated by sand bars or islands. Characteristic of flood plains where the amount of debris is large in relation to the discharge (StreamNet 2004).

**Broad scale** Coarse-grained level of assessment. Integrated in a hierarchical approach with mid- and fine-scale assessment (Wisdom et al. 2000).

**Brooding** Covering of the young. This stage begins with the hatching of the first egg and continues until the parents no longer cover the young at any time (Pettingill 1985).

**Brook** A natural stream of water, smaller than a river or creek; especially a small stream or rivulet which breaks directly out of the ground, as from a spring or seep; also,

a stream or torrent of similar size, produced by copious rainfall, melting snow and ice, etc.; a primary stream not formed by tributaries, though often fed below its source, as by rills or runlets; one of the smallest branches or ultimate ramifications of a drainage system (StreamNet 2004).

**Bryophyte** Any of a division (Bryophyta) of plants consisting of the mosses and liverworts (Neufeldt and Guralnik 1994).

**BOR** Bureau of Reclamation is an agency that administers some parts of the federal program for water resource development and use in western states. The Bureau of Reclamation owns and operates a number of dams in the Columbia River Basin, including Grand Coulee and several projects on the Yakima River (StreamNet 2004).

**Bottomland** Low-lying land along a watercourse (Mish 1999).

**Buffer zone** An area in a reserve surrounding the central core zone, in which nondestructive human activities such as ecotourism, traditional (low-intensity) agriculture, or extraction of renewable natural products, are permitted (Meffe et al. 1994).

**Butte** An isolated hill or mountain with steep or precipitous sides usually having a smaller summit area than a mesa (Mish 1999).

**Button-up fry** A salmonid fry that has not completely absorbed its yolk sac and has emerged from its spawning gravel (StreamNet 2004).

**Bypass system** A channel or conduit in a dam that provides a route for fish to move through or around the dam without going through the turbine units (StreamNet 2004).

**Calcareous** Of, like, or containing calcium carbonate, calcium, or lime (Neufeldt and Guralnik 1994).

**Caldera** A collapsed volcanic crater formed when molten rock flows out from beneath; caldera lakes occupy such concavities (Cole 1994b).

**Canal** A constructed open channel for transporting water (StreamNet 2004).

**Candidate Conservation Agreement (CCA)** A voluntary agreement between USFWS or NOAA Fisheries and other federal or non-federal landowners that identifies specific conservation measures that the participants of the agreement will undertake to conserve species covered by the agreement, none of which are listed under the Endangered Species Act, with the intention of preventing any need to list the species (U.S. Fish and Wildlife Service 2005).

**Candidate species** Plant and animal taxa for which the U.S. Fish and Wildlife Service has enough scientific information to support proposing them for listing under the

Endangered Species Act (ESA); these species have no legal protection under the ESA (Wisdom et al. 2000).

**Canopy** A layer of foliage in a forest stand. This most often refers to the uppermost layer of foliage, but it can be used to describe lower layers in a multistoried stand. Leaves, branches and vegetation that are above ground and/or water that provide shade and cover for fish and wildlife (StreamNet 2004).

**Capping** refers to the placement of dredged material over contaminated disposal sediments. This layer of clean sediment isolates the contaminants from the water column and from benthic organisms that may colonize the disposal site (NOAA Coastal Services Center 2005).

**Carbonate** Defined here as rock composed of carbonate minerals, especially limestone and dolomite (California Department of Fish and Game 2003).

**Carnivore** Restricted to animals that eat mammals, birds, reptiles, or amphibians (NatureServe 2005).

**Carrion** Dead and putrefying flesh (Mish 1999).

**Cascade** A short, steep drop in streambed elevation often marked by boulders and agitated whitewater (StreamNet 2004).

**Catadromous** Refers to species in which adults reproduce in salt water and juveniles migrate to fresh water to rear (California Department of Fish and Game 2003).

**Catchment** (1) The catching or collecting of water, especially rainfall. (2) A reservoir or other basin for catching water. (3) The water thus caught (StreamNet 2004).

**Cavity–nester** Species that nests in cavities in the trunk of a tree or snag (Wisdom et al. 2000).

**Census** A complete count within a particular area and time period (Thompson et al. 1998).

**Channel** An area that contains continuously or periodically flowing water that is confined by banks and a stream bed (StreamNet 2004).

**Channelization** The process of changing and straightening the natural path of a waterway (StreamNet 2004).

**Chytridiomycosis** An emerging disease responsible for some amphibian declines, usually montane species. The disease is caused by a fungal parasite (Daszak et al. 2003).

**Circumboreal** comprising or throughout far northern regions (WordReference.com 2005).

**Circumpolar** Surrounding or near either pole of the earth (Neufeldt and Guralnik 1994).

**Cirque** A deep steep-walled half-bowl-like recess or hollow situated high on the side of a mountain and commonly at the head of a glacial valley, and produced by the erosive activity of a mountain glacier (Bates and Jackson 1980).

**CITES** The Convention on International Trade in Endangered Species of Wild Fauna and Flora is an international agreement between governments to ensure the survival of wild animals and plants. Species listed under CITES cannot be transported between countries without a special permit (Braun 2005).

**Citizen science** A collaboration between managers and scientists on the one hand, and citizens on the other, in which trained and qualified citizens participate in the scientific process, especially the collection of data (Schoonmaker and Luscombe 2005).

**Clay** Substrate particles that are smaller than silt and generally less than 0.004 mm in diameter (StreamNet 2004).

**Clearcut harvest** A timber harvest method in which all trees are removed in a single entry from a designated area to create an even-aged stand (StreamNet 2004).

**Coarse woody debris** Fallen trees, snags, and decaying logs and large limbs distributed across the forest floor that are >10 cm (4 in) in diameter (Wisdom et al. 2000).

**Cobble** Substrate particles that are smaller than boulders and are generally 64–256 mm in diameter. They can be further classified as small and large cobble. Commonly used by salmon in the construction of a redd (StreamNet 2004).

**Cold-deciduous broadleaf** Woody angiosperms with wide, flat leaves (e.g., paper birch) that are shed by plants during the dormant season (that portion of the year when frosts occur) (McNab and Avers 1994).

**Colluvium** A general term applied to any loose, heterogeneous, and incoherent mass of soil material and/or rock fragments deposited by rainwash, sheetwash, or slow continuous downslope creep, usually collecting at the base of gentle slopes or hillsides. (Bates and Jackson 1980).

**Collection and bypass system** A system at a dam that collects and holds the fish approaching the dam for later transportation or moves them through or around the dam without going through the turbine units (StreamNet 2004).

**Colonization** The establishment of a species in an area not currently occupied by that species. Colonization may involve dispersal across an area of unsuitable habitat (StreamNet 2004).

**Commercial fishery (or harvest)** A fishery, using various types of fishing gear, that is intended to harvest one or more species of fish for the purpose of selling them to fish buyers or directly to the public (StreamNet 2004).

**Commercial forest land** Land declared suitable for producing timber crops and not withdrawn from timber production for other reasons (StreamNet 2004).

**Commercial thinning** The removal of generally merchantable trees from an even-aged stand, usually to encourage growth of the remaining trees (StreamNet 2004).

**Commodity resources** Goods or products of economic use or value (StreamNet 2004).

**Commons** Originally referred to lands in medieval Europe that were owned by townships rather than by private individuals. Now used to include any exploitable resource that is not privately owned. Sometimes applied to so-called “open resources” that are neither privately owned nor regulated by a country or agency (Meffe et al. 1994).

**Community** The cooccurrence of individuals of several species during a specified time and space that are interacting and show some degree of interdependence (Morrison and Hall 2002).

**Community dynamics** Response of communities to changes in their environment, to their use, and to stresses to which they are subjected. Climatic cycles, fire, insects, grazing, and physical disturbances are some of the many causes of changes in communities. Some changes are temporary while others are long lasting (Prichard 1998).

**Competition** Use or defense of a resource by one individual that reduces the availability of that resource to other individuals, whether of the same species (intraspecific competition) or of other species (interspecific competition) (Ricklefs and Miller 2000).

**Complexity** Relative comparisons of grains separated by a given distance (Morrison and Hall 2002).

**Confluence** (1) The act of flowing together; the meeting or junction of two or more streams; also, the place where these streams meet. (2) The stream or body of water formed by the junction of two or more streams; a combined flood (StreamNet 2004).

**Congeners** Belonging to the same genus (Ricklefs and Miller 2000).

**Conifer** A tree belonging to the order Gymnospermae, comprising a wide range of trees that are mostly evergreens. Conifers bear cones (hence, coniferous) and have needle-shaped or scale-like leaves (StreamNet 2004).

**Coniferous** Pertaining to Conifers, which bear woody cones containing naked seeds (StreamNet 2004).

**Conservation** The use of natural resources in ways such that they may remain viable for future generations. Compare with preservation (California Department of Fish and Game 2003).

**Conservation action** A specific conservation tool (e.g., habitat improvement, mitigation, acquisition or restoration) employed in a specific location (Schoonmaker and Luscombe 2005).

**Conservation biology** An integrative approach to the protection and management of biodiversity that uses appropriate principles and experiences from basic biological fields such as genetics and ecology, from natural resource management fields such as fisheries and wildlife, and from social sciences such as anthropology, sociology, philosophy, and economics (Meffe et al. 1994).

**Conservation easement** A purchased claim to some rights, generally development rights, on private property as a way of conserving both natural resources and private ownership (California Department of Fish and Game 2003).

**Conservation network** A system of land and water that is managed for the primary purpose of conserving the representative ecological attributes of a region. A conservation network may include lands that are used for other purposes, like recreation, agriculture, or forestry, as long as the ecological values are given special consideration, and the overall configuration of the network accommodates the needs of native species and habitats (Schoonmaker and Luscombe 2005).

**Conservation recommendation** A suggestion that USFWS or NOAA Fisheries may provide with a biological opinion describing discretionary conservation actions; it is advisory and does not carry any binding legal force (U.S. Fish and Wildlife Service 2005).

**Conservation Reserve Program (CRP)** Provision of the 1985 Food Security Act that allows the Federal Government to pay farmers to set aside highly erodible cropland. In lieu of planting traditional crops, farmers instead convert the land to less intensive uses such as plantings of pasture or perennial grasses, trees, or other perennial vegetation cover for at least 10 years (Wisdom et al. 2000).

**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 (StreamNet 2004).

**Conservation status ranks** Numbers between 1 and 5 (1= critically imperiled, 2 = imperiled, 3 = vulnerable, 4 = apparently secure, 5 = secure) and preceded by a letter reflecting the appropriate geographic scale (G = global, N = National, S = Subnational) assigned to species or communities (NatureServe 2005).

**Contaminate** To make impure or unclean by contact or mixture (StreamNet 2004).

**Contiguous** Bordering upon or touching (Simpson and Wallace 1978).

**Contiguous habitat** Habitat suitable to support the life needs of species that is distributed continuously or nearly continuously across the landscape (StreamNet 2004).

**Conspecific** Belonging to the same species (Ricklefs and Miller 2000).

**Core zone** Within a larger protected reserve or park, an area of critically important habitat in which development and other kinds of disruptive activities are prohibited (Meffe et al. 1994).

**Corps of Engineers (U.S. Army)** An agency with the responsibility for design, construction and operation of civil works, including multipurpose dams and navigation projects (StreamNet 2004).

**Corridor** A defined tract of land, usually linear, through which a species must travel to reach habitat suitable for reproduction and other life sustaining needs (StreamNet 2004).

**COSEWIC** The Committee on the Status of Endangered Wildlife in Canada is a committee of experts that assesses and designates wild species that are in danger of disappearing from Canada ([http://www.cosewic.gc.ca/eng/sct6/index\\_e.cfm](http://www.cosewic.gc.ca/eng/sct6/index_e.cfm)).

**Cover** Vegetation used by wildlife for protection from predators, weather conditions, or to reproduce. Cover may also refer to the protection of the soil and the shading provided to herbs and forbs by vegetation (StreamNet 2004).

**Crepuscular** Activity concentrated near sunrise or sunset (Feldhamer 1999).

**Critical habitat** Under the Endangered Species Act, critical habitat is defined as (1) the specific areas within the geographic area occupied by a federally listed species on which are found physical and biological features essential to the conservation of the species, and that may require special management considerations or protections; and (2) specific areas outside the geographic area occupied by a listed species, when it is

determined that such areas are essential for the conservation of the species (StreamNet 2004).

**Crucial habitat** Habitat that is basic to maintaining viable populations of fish and wildlife during certain seasons of the year or specific reproduction periods (StreamNet 2004).

**Crustaceans** Arthropods, including shrimps, crabs, barnacles, and lobsters that are typically aquatic and breathe through gills. They have a hard outer shell and jointed appendages (Neufeldt and Guralnik 1994).

**Cryptic species** Distinct species that show little to no outward morphological differences, and thus are difficult to distinguish. Also called “sibling species” (Meffe et al. 1994).

**Culvert** A buried pipe that allows streams, rivers, or runoff to pass under a road (StreamNet 2004).

**Cumulative effects** The combined environmental impacts that accrue over time and space from a series of similar or related individual actions, contaminants, or projects (StreamNet 2004).

**Current threats** Threats that are actively occurring (Salafsky et al. 2003).

**Cygnets** A young swan (Neufeldt and Guralnik 1994).

**Dam** A concrete or earthen barrier constructed across a river and designed to control water flow or create a reservoir (StreamNet 2004).

**Deadfall** A tangled mass of fallen trees and brush (Neufeldt and Guralnik 1994).

**Deciduous** Trees and plants that shed their leaves at the end of the growing season (StreamNet 2004).

**Decomposition** The breakdown of matter by bacteria and fungi, changing the chemical makeup and physical appearance of materials (StreamNet 2004).

**Delist** To remove an animal or plant species from the list of endangered and threatened wildlife and plants (U.S. Fish and Wildlife Service 2005).

**Demand** The aggregate desire for economic goods and services. The quantity of a good or service that consumers are willing to purchase at different prices. Demand involves the relationship between quantity and price (Meffe et al. 1994).

**Deme** A randomly interbreeding (panmictic) local population (Meffe et al. 1994).

**Demographic bottleneck** A significant, usually temporary, reduction in genetically effective population size, either from a population “crash” or a colonization event by a few founders (Meffe et al. 1994).

**Demographic uncertainty** Chance population events, such as sex ratios or the act of finding a mate, that influence survival in small populations (Meffe et al. 1994).

**Density (population density)** The number of individuals per unit area (Lancia et al. 1994).

**Density–dependent factors** Life history or population parameters that are a function of population density (Meffe et al. 1994).

**Density–independent factors** Life history or population parameters that are independent of population density (Meffe et al. 1994).

**DEQ** Department of Environmental Quality

**Desert** Extremely dry landscape, sparsely vegetated by herbs, shrubs, or succulent tree–like plants; relatively barren substrate tends to dominate the aspect of the habitat (NatureServe 2005).

**Destruction or adverse modification of critical habitat** A direct or indirect alteration that appreciably diminishes the value of critical habitat for both the survival and recovery of a listed species (U.S. Fish and Wildlife Service 2005).

**Detritus** Undissolved organic and inorganic matter, such as small pieces of vegetation, and animal remains, that result from decomposition and help form the base of the food chain (StreamNet 2004).

**Diatoms** Microscopic, unicellular plants, that occur singly or in colonies and belong to the class Algae. Diatoms are abundant in marine and freshwater plankton (Abercrombie et al. 1967).

**Dike** (1) (Engineering) An embankment to confine or control water, especially one built along the banks of a river to prevent overflow of lowlands; a levee. (2) A low wall that can act as a barrier to prevent a spill from spreading. (3) (Geology) A tabular body of igneous (formed by volcanic action) rock that cuts across the structure of adjacent rocks or cuts massive rocks (StreamNet 2004).

**Direct threats** Factors that immediately cause stress to conservation targets by physically causing their destruction or degrading their integrity. Synonymous with sources of stress or proximate pressures (Salafsky et al. 2003).

**Discharge** Volume of water released from a dam or powerhouse at a given time, usually expressed in cubic feet per second (StreamNet 2004).

**Disjunct** Separated (Neufeldt and Guralnik 1994).

**Dispersal** Movement of organisms away from their place of birth or from centers of population density (Ricklefs and Miller 2000).

**Distancing** An economic term that refers to the process of specialization creating alienation (distance) of people from each other, from the means of production of essential goods and services, and from the environment (Meffe et al. 1994).

**Distinct population segment (DPS)** A subdivision of a vertebrate species that is treated as a species for purposes of listing under the Endangered Species Act. To be so recognized, a potential distinct population segment must satisfy standards specified in a USFWS or NOAA Fisheries policy statement (See the February 7, 1996, Federal Register, pages 4722–4725). The standards require it to be separable from the remainder of and significant to the species to which it belongs (U.S. Fish and Wildlife Service 2005).

**Distribution** The spatial arrangement or pattern of occurrence for a species or habitat throughout the state; generally more precise than range (California Department of Fish and Game 2003).

**Disturbance** A force that causes significant change in structure and/or composition through natural events such as fire, flood, wind, or earthquake, mortality caused by insect or disease outbreaks, or by human–caused events, e.g., the harvest of forest products (StreamNet 2004).

**Disturbance regime** Natural pattern of periodic disturbances, such as fire or flood, followed by a period of recovery from the disturbance, e.g., regrowth of a forest after a fire (Wisdom et al. 2000).

**Diurnal** Characteristically active during daylight hours (NatureServe 2005).

**Diversion** The transfer of water from a stream, lake, aquifer, or other source of water by a canal, pipe, well, or other conduit to another watercourse or to the land, as in the case of an irrigation system (StreamNet 2004).

**Diversion channel** (1) An artificial channel constructed around a town or other point of high potential flood damages to divert floodwater from the main channel to minimize flood damages. (2) A channel carrying water from a diversion dam (StreamNet 2004).

**Diversion dam** A barrier built to divert part or all of the water from a stream into a different course (StreamNet 2004).

**Diversity** The number and relative abundance of species in a community. Diversity involves the number of species and species evenness.

**Division** An ecological unit in the ecoregion planning and analysis scale of the National Hierarchical Framework corresponding to subdivisions of a Domain that have the same regional climate (ECOMAP 1993).

**DOD** Department of Defense.

**Domain** An ecological unit in the ecoregion planning and analysis scale of the National Hierarchical Framework corresponding to subcontinental divisions of broad climatic similarity that are affected by latitude and global atmospheric conditions (ECOMAP 1993).

**Down (feathers)** Natal down feathers are present at hatching or appear within a few days. Natal down feathers are called neossoptiles and are different from adult down feathers because their barbules are shorter and less distinctly shaped and the tips of their central barbs are without barbules. Adult down feathers appear as a fluffy tuft and are the most common on waterfowl and other aquatic birds (Pettingill 1985).

**Drainage** An area (basin) mostly bounded by ridges or other similar topographic features, encompassing part, most, or all of a watershed and enclosing some 5000 acres (StreamNet 2004).

**Draw** A gully or ravine that water drains into or through (Neufeldt and Guralnik 1994).

**Drawdown** The release of water from a reservoir for power generation, flood control, irrigation or other water management activity (StreamNet 2004).

**Dredging** Digging up and removing material from wetlands or waterways, usually to make them deeper or wider (StreamNet 2004).

**Drought** Generally, the term is applied to periods of less than average or normal precipitation over a certain period of time sufficiently prolonged to cause a serious hydrological imbalance resulting in biological losses (impact flora and fauna ecosystems) and/or economic losses (StreamNet 2004).

**Drumlin** An elongated hill or ridge of glacial drift (McNab and Avers 1994).

**Dry** A classification of climate based on the Koppen System for regions where evaporation exceeds precipitation (Bailey 1980).

**Duff** Decaying vegetable matter on the ground in a forest (Neufeldt and Guralnik 1994).

**Early seral** Communities that occur early in the vegetation successional path and generally have less complex structural development than later successional communities (Wisdom et al. 2000).

**Ecological integrity** The maintenance of native and desired nonnative species and associated processes (Wisdom et al. 2000).

**Ecological interaction** The sum total of impacts of one species on another species, or on other members of the same species (StreamNet 2004).

**Ecological release** Habitat expansion or density increase of a species when one or more competing species are not present (Meffe et al. 1994).

**Ecological system** A recurring biological community that is found in similar physical environments and is influenced by similar dynamic ecological processes, such as fire or flooding (Schoonmaker and Luscombe 2005).

**Ecologically significant** Species, stands, and forests considered important to maintain the structure, function, and processes of particular ecosystems (StreamNet 2004).

**Ecological site** An area of land with a specific potential plant community and specific physical site characteristics, differing from other areas of land in its ability to produce vegetation and to respond to management. Ecological site is synonymous with range site (Prichard 1998).

**Ecological system** A terrestrial ecological system is defined as a group of plant community types that tend to co-occur within landscapes with similar ecological processes, substrates, and/or environmental gradients. A given terrestrial ecological system will typically manifest itself in a landscape at intermediate geographic scales of 10s to 1000s of hectares and persist for 50 or more years (NatureServe. 2005).

**Ecoregion** A scale of planning and analysis in the National Hierarchical Framework that has broad applicability for modeling and sampling, strategic planning and assessment, and international planning. Ecoregions include Domain, Division, and Province ecological units (McNab and Avers 1994).

**Ecosystem** A complete interacting system of organisms and their environment (McNab and Avers 1994).

**Ecosystem approach** A philosophy of resource management that focuses on protecting or restoring the function, structure, and species composition of an ecosystem, recognizing that all components are interrelated (U.S. Fish and Wildlife Service 2005).

**Ecotone** the transition zone between two different plant communities, as that between forestland and rangeland (Wisdom et al. 2000).

**Ectoparasite** A parasite that lives on, or attached to, the surface of its host (Ricklefs and Miller 2000).

**Eddy** A circular current of water, usually resulting from an obstruction (StreamNet 2004).

**Edge** The boundary between two plant communities or the interface where successional stages or vegetative conditions meet and change (StreamNet 2004).

**Edge effect** (1) The negative influence of a habitat edge on interior conditions of a habitat, or on species that use interior habitat. (2) The effect of adjoining habitat types on populations in the edge ecotone, often resulting in more species in the edge than in either habitat alone (Meffe et al. 1994).

**Efficient allocation** An economic term that refers to the market's ability to match resources with material ends. The apportionment of resources to the production of different goods and services (Meffe et al. 1994).

**Effluent** (1) Something that flows out or forth, especially a stream flowing out of a body of water. (2) (Water quality) Discharged wastewater such as the treated wastes from municipal sewage plants, brine wastewater from desalting operations, and coolant waters from a nuclear power plant (StreamNet 2004).

**Element** Unit of natural biological diversity, representing species (or infraspecies taxa), ecological communities, ecological systems, or other non-taxonomic biological entities, such as migratory species aggregation areas (NatureServe 2005).

**Element Occurrence** Area of land and/or water where a species or natural community is, or was, present and has practical conservation value (NatureServe 2005).

**Emergent vegetation** Plants rooted in water whose upper parts emerge above the water line (Ricklefs and Miller 2000).

**Emigration** Referring to the movement of organisms out of an area (StreamNet 2004).

**Empirical trend** Population trend based on direct observation (e.g., Breeding Bird Survey data) rather than theory or models (Wisdom et al. 2000).

**Endangered species** Any species of plant or animal defined through the Endangered Species Act as being in danger of extinction throughout all or a significant portion of its range, and published in the Federal Register (StreamNet 2004).

**Endangered Species Act (ESA)** A 1973 Act of Congress that mandated that endangered and threatened species of fish, wildlife, and plants be protected and restored (StreamNet 2004).

**Endemic** Plants or animals that occur naturally in a certain region and whose distribution is limited to a particular locality (Wisdom et al. 2000).

**Endemism** Measure of distribution for taxa that are found only in one specific area, such as one region or the state itself. A region of high endemism has many taxa restricted to it (California Department of Fish and Game 2003).

**Environmental impact** The positive or negative effect of any action upon a give area or resource (StreamNet 2004).

**Environmental modification** Modification of the phenotype as a result of environmental influences on the genotype (Meffe et al. 1994).

**Environmental uncertainty** Unpredictable sources of density-independent mortality, such as an early snowstorm, that jeopardize the survival of a small population by pushing it below its minimum viable population size (Meffe et al. 1994).

**EPA** Environmental Protection Agency.

**Ephemeral streams** Streams which flow only in direct response to precipitation and whose channel is at all times above the water table (StreamNet 2004).

**Epiphytes** Plants that grow on the branches of other plants and are not rooted in the soil (Ricklefs and Miller 2000).

**Equilibrium** A state reached when the population birth rate and immigration is equal to mortality and emigration. Also applied to species changes in a community or to any other ecological process in which rate of increase equals rate of decrease, resulting in a steady state (Meffe et al. 1994).

**Erosion** Wearing away of rock or soil by the gradual detachment of soil or rock fragments by water, wind, ice, and other mechanical, chemical, or biological forces (StreamNet 2004).

**ESA** Endangered Species Act.

**Estivate (estivation)** A dormant period of several days or longer in summer during which a mammal allows its body temperature to approximate ambient temperature (Feldhamer et al. 1999).

**Estuary** A semi-enclosed coastal water, often at the mouth of a river, having a high input of fresh water and great fluctuations in salinity (Ricklefs and Miller 2000).

**Eutrophication** The process of enrichment of waterbodies by nutrients (StreamNet 2004).

**Evolutionarily significant unit (ESU)** Refers to a genetically distinct population segment of a species. An ESU is protected under the federal Endangered Species Act, which defines species to include "any subspecies of fish or wildlife or plants, and any

distinct population segment of any species of vertebrate fish or wildlife that interbreeds when mature" (California Department of Fish and Game 2003).

**Excavation** A cavity formed by cutting, digging, or scooping (Mish 1999).

**Exotic** Not native; an organism or species that has been introduced into an area (Wisdom et al. 2000).

**Experimental population** A population (including its offspring) of a listed species designated by rule published in the Federal Register that is wholly separate geographically from other populations of the same species. An experimental population may be subject to less stringent prohibitions than are applied to the remainder of the species to which it belongs (U.S. Fish and Wildlife Service 2005).

**Extant** Still existing (California Department of Fish and Game 2003).

**Extensive margin** Refers to low-quality agricultural lands in which increased inputs do not produce greater net economic returns per unit land area; rather economic returns are increased by increasing land area (Meffe et al. 1994).

**Extent** The area over which observations are made and the duration of those observations (Morrison and Hall 2002).

**Externality** A cost, usually in terms of environmental degradation, that results from an economic transaction but is not included as a debit against economic returns (Meffe et al. 1994).

**Extinct** Refers to a plant or animal or vegetation type that no longer exists anywhere (California Department of Fish and Game 2003).

**Extirpated** Refers to a plant or animal or vegetation type that has been locally eliminated, but is not extinct (California Department of Fish and Game 2003).

**Factors** Threats and opportunities together (Salafsky et al. 2003).

**Facultative** Available under certain conditions or circumstances, optional for the organism. Compare with obligate (Ricklefs and Miller 2000).

**Fauna** (1) A term used to describe the animal species of a specific region or time. (2) All animal life associated with a given habitat, country, area, or period (StreamNet 2004).

**Federal action agency** Any department or agency of the United States proposing to authorize, fund, or carry out an action under existing authorities (U.S. Fish and Wildlife Service 2005).

**Federal Register** The official daily publication for actions taken by the Federal government, such as Rules, Proposed Rules, and Notices of federal agencies and organizations, as well as Executive Orders and other Presidential Documents (U.S. Fish and Wildlife Service 2005).

**Feedback** Refers to a system whose output modifies input to the system. Prices play this role in market systems (Meffe et al. 1994).

**Fen** Wetlands with peat or muck substrate resulting from unusual water chemistry; includes areas of highly mineralized groundwater discharge and other peatlands (NatureServe 2005).

**Fencerow scale** With respect to corridors, the connection of habitat patches by narrow rows of habitat, usually effective only for small, edge-tolerant species (Meffe et al. 1994).

**Fidelity** The quality or state of being faithful (Mish 1999).

**Filament** Slender or threadlike, said of certain elongated fin rays in some fishes (Simpson and Wallace 1978).

**Filter-feeders** Aquatic heterotrophs, such as clams and oysters, that sift small food particles from the water (Campbell 1987).

**Fingerlings** Young fish; a stage between the fry and adults (Simpson and Wallace 1978).

**Fish ladder** See Fishway.

**Fish passage facilities** Features of a dam that enable fish to move around, through, or over without harm. Generally, an upstream fish ladder or a downstream bypass system (StreamNet 2004).

**Fishway** A device made up of a series of stepped pools, similar to a staircase, that enables adult fish to migrate up the river past dams (StreamNet 2004).

**Fissure** A long, narrow, deep cleft or crack (Neufeldt and Guralnik 2004)

**Fitness** The relative ability of an individual (or population) to survive and reproduce (pass on its genes to the next generation) in a given environment (StreamNet 2004).

**Flash flood** A sudden flood of great volume, usually caused by a heavy rain. Also, floods that crest in a short length of time and are often characterized by high velocity flows. Flash floods are often the result of heavy rainfall in a localized area (StreamNet 2004).

**Fledged** When a young bird takes flight for the first time (Pettingill 1985).

**Floodplain** The surface or strip of relatively smooth land adjacent to a river channel, constructed by the present river in its existing regimen and covered with water when the river overflows its banks (Bates and Jackson 1980).

**Flora** (1) A term used to describe the entire plant species of a specified region or time. (2) The sum total of the kinds of plants in an area at one time. All plant life associated with a given habitat, country, area, or period. Bacteria are considered flora (StreamNet 2004).

**Flush** To drive from cover (Neufeldt and Guralnik 1994).

**Fluvial** Migrating between main rivers and tributaries. Of or pertaining to streams or rivers (StreamNet 2004).

**Foliage** Leaves, as of a plant or tree; mass of leaves (Neufeldt and Guralnik 1994).

**Food chain** A representation of the passage of energy through populations in a community (Ricklefs and Miller 2000).

**Forage** To search for food (Neufeldt and Guralnik 1994).

**Forb** Herbaceous broad-leaved vegetation, such as clover, as distinguished from a grass or a woody plant (California Department of Fish and Game 2003).

**Forest** Woody vegetation at least 6 m tall with fairly continuous and complete canopy closure (NatureServe 2005).

**Forest management** Planting, growing, and tending a stand of trees as well as the economics associated with growing trees. There are two general systems: uneven-aged and even-aged (Society of American Foresters 1981).

**Fossorial** Digging or adapted for digging; burrowing (Neufeldt and Guralnik 1994).

**Founder effect** The principle that the founders of a new population carry only a random fraction of the genetic diversity found in the larger, parent population (Meffe et al. 1994).

**Fragmentation** A condition in which a continuous area is reduced and divided into smaller sections (Feldhamer et al. 1999).

**Freshet** A rapid and temporary increase in stream flow due to heavy rains or snow melt (StreamNet 2004).

**Friable** Easily crumbled or crushed into powder (Neufeldt and Guralnik 2004).

**Frugivore** Species that eats soft fruits (NatureServe 2005).

**Fundamental Theorem of Natural Selection** The basic theorem of population genetics, which states that the rate of evolutionary change in a population is proportional to the amount of genetic diversity (specifically, additive genetic variance) available in the population (Meffe et al. 1994).

**Furbearer** An animal that bears fur, especially of a commercially desired quality (Mish 1999).

**Fry** New hatched fish; fry of game fish from hatching to an inch or so (Simpson and Wallace 1978).

**Future threats** Threats that are not actively occurring, but have some probability of occurring in the future (Salafsky et al. 2003).

**GAP analysis** Coarse-filter method of evaluating large areas for conservation, in which gaps in protection of biodiversity (typically indicated by vegetation types and vertebrate species) are identified (Wisdom et al. 2000).

**Gene flow** The uni- or bi-directional exchange of genes between populations due to migration of individuals and subsequent successful reproduction in the new population (Meffe et al. 1994).

**Gene locus** The site on a chromosome occupied by a specific gene (Meffe et al. 1994).

**Gene pool** The sum total of genes in a sexually reproducing population, or deme (Meffe et al. 1994).

**Genetic drift** Chance process in which allele frequency changes in a random fashion; less important in large populations (Wisdom et al. 2000).

**Genetic isolation** See Isolation.

**Genotype** The entire genetic constitution of an organism, or the genetic composition at a specific gene locus or set of loci (Meffe et al. 1994).

**Genus (pl. genera)** A classification group between species and family (Simpson and Wallace 1978).

**Geographic Information System (GIS)** An organized assembly of people, data, techniques, computers, and programs for acquiring, analyzing, storing, retrieving, and displaying spatial information about the real world (California Department of Fish and Game 2003).

**Geographic variation** Change in a species' trait over distance or among different distinct populations. Measurable character divergence among geographically distinct populations, often, though not necessarily, the result of local selection (Meffe et al. 1994).

**Geothermal** Having to do with the heat of the earth's interior (Neufeldt and Guralnik 1994).

**Glacial outwash** Applies to material carried from and beyond the ice as a glacier retreats by melting (Cole 1994b).

**Goal** An overarching statement of desired condition at some time in the future (Schoonmaker and Luscombe 2005).

**Gorge** A narrow passage through land, especially a narrow steep-walled canyon or part of a canyon (Mish 1999).

**Gradual allopatric speciation** The process of species formation by which a population is split into two or more subpopulations by a geographic barrier, followed by evolutionary divergence until one or more of the populations become distinct species (Meffe et al. 1994).

**Grain** (1) The spatial and temporal resolution of observations; the smallest resolvable unit of study (Morrison and Hall 2002). (2) The scale of heterogeneity of habitats in relation to the activities of organisms (Ricklefs and Miller 2000).

**Granivore** Taxa that eat seeds or hard fruits (NatureServe 2005).

**Gravel** See Cobble.

**Groundwater** Subsurface water and underground streams that can be collected with wells, or that flow naturally to the earth's surface through springs (StreamNet 2004).

**Guild** A group of species that exploit the same class of environmental resources in a similar way (Root 1967).

**Habitat** Where a given plant or animal species meets its requirements for food, cover, and water in both space and time; may or may not coincide with a single vegetation type (California Department of Fish and Game 2003).

**Habitat availability** The accessibility and procurability of physical and biological components in a habitat (Hall et al. 1997).

**Habitat avoidance** An oxymoron that should not be used; wherever an animal occurs defines its habitat (Morrison and Hall 2002).

**Habitat Conservation Plan (HCP)** A plan that outlines ways of maintaining, enhancing, and protecting a given habitat type needed to protect species; usually includes measures to minimize impacts, and may include provisions for permanently protecting land, restoring habitat, and relocating plants or animals to another area. Required before an incidental take permit may be issued (U.S. Fish and Wildlife Service 2005).

**Habitat Evaluation Procedures (HEP)** A method developed by the U.S. Fish and Wildlife Service for evaluating the quality of wildlife habitat. A general class of appraisal systems to judge habitat availability and quality for a given species. An HEP combines a habitat quality measure, such as an HIS, with areal extent or availability of the habitat (Meffe et al. 1994).

**Habitat fragmentation** The segmentation of habitat into discrete islands through modification or conversion of habitat (StreamNet 2004).

**Habitat monitoring group** A cooperative partnership between federal, state, and local agencies, conservation organizations, and wildlife interest groups formed to facilitate monitoring, assessment, and reporting activities (Schoonmaker and Luscombe 2005).

**Habitat or ecosystem management** A management focus that de-emphasizes individual species, focusing instead on maintaining habitat or ecosystem quality, including ecological processes important in maintaining the characteristic biodiversity of an area (Meffe et al. 1994).

**Habitat preference** Used to describe the relative use of different locations (habitats) by an individual or species (Morrison and Hall 2002).

**Habitat quality** The ability of the area to provide conditions appropriate for individual and population persistence (Hall et al. 1997).

**Habitat selection** A hierarchical process involving a series of innate and learned behavioral decisions made by an animal about what habitat it would use at different scales of the environment (Hutto 1985:458, Hall et al. 1997).

**Habitat status** The geographical extent, ecological condition, and management paradigm of a particular habitat (Schoonmaker and Luscombe 2005).

**Habitat Suitability Index (HSI)** A relative index developed by the U.S. Fish and Wildlife Service to compare a habitat against an “ideal” optimal habitat (Meffe et al. 1994).

**Habitat trend** Change in habitat status over time, measured by monitoring that habitat in a consistent and comparable manner (Schoonmaker and Luscombe 2005).

**Habitat use** The way an animal uses (or "consumes," in a generic sense) a collection of physical and biological entities in a habitat (Hall et al. 1997).

**Harass** To intentionally or negligently, through act or omission, create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns such as breeding, feeding, and sheltering (defined by USFWS regulation; NOAA Fisheries has not defined "harass" by regulation) (U.S. Fish and Wildlife Service 2005).

**Harm** To perform an act that kills or injures wildlife; may include significant habitat modification or degradation when it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering (U.S. Fish and Wildlife Service 2005).

**Hatchery** Refers to facilities that incubate fish eggs and rear the young for release into streams and rivers (StreamNet 2004).

**Hazardous materials** Anything that poses a substantive present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed (StreamNet 2004).

**Headwater** Referring to the source of a stream or river (StreamNet 2004).

**Herbaceous** Vegetation or parts of plants with little or no woody tissue (StreamNet 2004).

**Herbivore** Restricted to taxa that eat plant material (NatureServe 2005).

**Heritage ranks** See Conservation status ranks.

**Heterozygosity** A measure of the genetic diversity in a population, as measured by the number of heterozygous loci across individuals (Meffe et al. 1994).

**Heterozygous** The situation in which an individual has two different alleles at a given gene locus (Meffe et al. 1994).

**Hibernaculum** Habitat niches where certain animals (e.g., bats) overwinter, such as caves, mines, tree hollows, or loose bark (Wisdom et al. 2000).

**Historic range** The geographic area where a species was known to or believed to occur within historic time (U.S. Fish and Wildlife Service 2005).

**Holotype** (1) The single specimen designated by an author as the type of a species or lesser taxon at the time of establishing the group. (2) The type of a species or lesser taxon designated at a date later than that of establishing a group or by another person than the author of the taxon (Mish 1999).

**Home Range** An area an individual animal traverses during normal activities for a specified period of time (Morrison and Hall 2002).

**Homozygous** The situation in which an individual has two of the same alleles at a given gene locus (Meffe et al. 1994).

**Hot spot** A geographic location characterized by unusually high species richness, often of endemic species (Meffe et al. 1994).

**Hummock** A low rounded hill; knoll (Neufeldt and Guralnik 1994).

**Hybrid** An offspring that results from the mating of individuals of different species or subspecies (StreamNet 2004).

**Hybridization** Refers here to the crossbreeding of two animals or plants of different species or subspecies (California Department of Fish and Game 2003).

**Hydrology** A science dealing with the properties, distribution, and circulation of water on and below the earth's surface and in the atmosphere (Mish 1999).

**Hypogean** Subterranean, living below the surface; interstitial or cave dwelling (Cole 1994b).

**Idiosyncratic** An individual peculiarity or mannerism (Neufeldt and Guralnik 1994).

**Igneous** Rock that has solidified from molten magma at or below the earth's surface (Neufeldt and Guralnik 1994).

**Immigration** Referring to the movement of organisms into an area (StreamNet 2004).

**Impact** A spatial or temporal change in the environment caused by human activity (StreamNet 2004).

**Impact indicator** Indicates a change in the natural resource as a result of a pressure (Schoonmaker and Luscombe 2005).

**Implementation schedule** An outline of actions, with responsible parties, estimated costs and timeframes, for meeting the recovery objectives described in a species' recovery plan (U.S. Fish and Wildlife Service 2005).

**Impoundment (water)** To gather and enclose for irrigation (Neufeldt and Guralnik 2004).

**Inbreeding** The mating of individuals who are more closely related than by chance alone (Meffe et al. 1994).

**Inbreeding depression** A reduction in fitness and vigor of individuals as a result of increased homozygosity through inbreeding in a normally outbreeding population (Meffe et al. 1994).

**Incidental take** Take that results from, but is not the purpose of, carrying out an otherwise lawful activity (U.S. Fish and Wildlife Service 2005).

**Incipient species** A population or group of populations in the process of speciating. Also called semispecies (Meffe et al. 1994).

**Incubation** The period of time from egg fertilization until hatching (StreamNet 2004).

**Indicator** A measure that tracks goals, objectives, actions, and targets (or inputs, outputs, and outcomes) by stating them in specific and observable terms (Schoonmaker and Luscombe 2005).

**Indicator species** Species whose response to environmental conditions is assumed to be an index like responses of a larger number of species and whose habitats can therefore be managed to benefit a larger set of species (Wisdom et al. 2000).

**Indigenous** Existing naturally in a region, state, country, etc. (StreamNet 2004).

**Indirect effect** An effect caused by a proposed action that takes place later in time than the action, but is still reasonably certain to occur (U.S. Fish and Wildlife Service 2005).

**Indirect threat** Affect direct threats (Salafsky et al. 2003)

**Inferred extent** Spatial representation of the potential or probable habitat occupied by a population (NatureServe 2005).

**Instrumental value** The worth of an entity as judged by its utility or usefulness to humans (Meffe et al. 1994).

**Intensive margin** Refers to high-quality agricultural lands in which increased inputs produce greater net economic returns per unit land area (Meffe et al. 1994).

**Intermittent stream** Any nonpermanent flowing drainage 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 (StreamNet 2004).

**Intrinsic value** The worth of an entity independent from external circumstances or its value to humans; value judged on inherent qualities of an entity rather than value to other entities (Meffe et al. 1994).

**Introduced** Refers to any species intentionally or accidentally transported and released into an environment outside its native range (California Department of Fish and Game 2003).

**Invasive** An introduced species which spreads rapidly once established and has the potential to cause environmental or economic harm. Not all introduced species are invasive (California Department of Fish and Game 2003).

**Invertebrate** An animal without an internal skeleton. Examples are insects, spiders, clams, shrimp, and snails (California Department of Fish and Game 2003).

**Invertivore** Taxa that eats invertebrates (NatureServe 2005).

**Isolation (genetic)** Absence of genetic crossing among populations because of distance or geographic barriers (StreamNet 2004).

**Issue** A matter of controversy or dispute over resource management activities that is well defined or topically discrete (StreamNet 2004).

**Karyotypic** The chromosome complement of a cell or an individual organism. Karyotypes are often represented by the arrangement of metaphase (stage of nuclear division) chromosomes according to their lengths and to the positions of their centromeres (Hartl 1994).

**Key ecological function (KEF)** The primary set of activities performed by organisms that affect the ecological function of their ecosystems. An example is decomposition of byproducts of decaying organic material or creation of burrows that can be occupied by secondary burrow users (Wisdom et al. 2000).

**Key process** An ecosystem analog of keystone species; a critical ecosystem function that controls broad ecosystem characteristics. Nitrogen or phosphorous cycling, for example, may be key processes in given ecosystems (Meffe et al. 1994).

**Key species management** Management directed toward maintaining keystone species or other ecologically or politically important species as a surrogate for managing for all species in a system (Meffe et al. 1994).

**Keystone species** Species that have a disproportionately large effect on other species in a community (Meffe et al. 1994).

**Land use cover** A coarse 21–category system for interpreting Thematic Mapper images, developed by U.S. Geological Survey (Schoonmaker and Luscombe 2005).

**Landsat** Satellite–based imaging system that provides an array of remote images of various resolutions and spectral types, for example Thematic Mapper data (Schoonmaker and Luscombe 2005).

**Landscape** A large area that includes one or more ecosystems (Ricklefs and Miller 2000).

**Landscape diversity** The size, shape, and connectivity of different ecosystems across a large area (StreamNet 2004).

**Landscape feature** Widespread or characteristic features within the landscape (e.g., stand type, site, soil, patch) (Morrison and Hall 2002).

**Landscape mosaic scale** With respect to corridors, the connection of major landscape features using broad habitats, including representation of interior habitat, as corridors (Meffe et al. 1994).

**Larva** A free-living, sexually immature form in some animal life cycles that may differ from the adult in morphology, nutrition, and habitat (Campbell 1987).

**Late seral** Vegetative communities that occur in the later stage of the successional path with mature, generally larger plants that dominate the overstory (Wisdom et al. 2000).

**Latitude** An imaginary horizontal line representing degrees north or south of the Equator. The Equator is zero degrees while the North Pole is 90 degrees north (California Department of Fish and Game 2003).

**Lead agency** An agency from among two or more agencies involved in a proposed federal action that is assigned lead responsibility for a consultation. When a federal action involves more than one federal agency, the agencies may coordinate to designate a lead agency for purposes of consultation with the USFWS or NOAA Fisheries (U.S. Fish and Wildlife Service 2005).

**Legacy tree** Large (>53 cm [21 in] d.b.h.), mature trees that remain in a managed forest stand through two or more rotations or silvicultural entries (Wisdom et al. 2000).

**Lek** A communal courtship area on which several males hold courtship territories to attract and mate with females; sometimes called an arena (Ricklefs and Miller 2000).

**Lentic** Pertaining to standing water, as in ponds and lakes (Cole 1994).

**Level** The level of organization revealed by observation at the scale under study (King 1997).

**Lichen** Mutualistic collective of algae that live symbiotically with fungi (Campbell 1987).

**LIDAR** Light Detection And Ranging. LIDAR resolves structural habitat characteristics better than Thematic Mapper images but is far more expensive (Schoonmaker and Luscombe 2005).

**Life zones** A classification of macroclimatic conditions based on temperature and precipitation that has been widely applied in tropical environments to delineate zones dominated by vegetative communities of characteristic physiognomy and composition (Holdridge 1967).

**Line corridor** A simple, narrow corridor consisting of all edge habitat, usually connecting small habitat patches (Meffe et al. 1994).

**Lineage** The ancestry of a species during evolution (Hartl 1994).

**Listed** General term used for a taxon protected under the federal Endangered Species Act (California Department of Fish and Game 2003).

**Listed species** A species, subspecies, or distinct population segment that has been added to the federal list of endangered and threatened wildlife and plants (U.S. Fish and Wildlife Service 2005).

**Listing** The formal process through which USFWS or NOAA Fisheries adds species to the federal list of endangered and threatened wildlife and plants (U.S. Fish and Wildlife Service 2005).

**Littoral** Referring to the marginal region of a body of water; the shallow, near-shore region; often defined by the band from zero depth to the outer edge of the rooted plants (Cole 1994b).

**Loaf** To spend time idly; loiter or lounge about (Neufeldt and Guralnik 1994).

**Loam** Fertile soil type made up of a mixture of sand, silt, and clay (Campbell 1987).

**Locus** See gene locus.

**Loess** An unstratified usually buff to yellowish brown loamy deposit found in North America, Europe, and Asia and believed to be chiefly deposited by the wind (Mish 1999).

**Longitude** An imaginary vertical line representing degrees east or west of the Prime Meridian at Greenwich, London. Greenwich is zero degrees while the line directly opposite it (in the Pacific Ocean) is 180 degrees west or east of the Prime Meridian (California Department of Fish and Game 2003).

**Lore** The space between the eye and the upper edge of the bill of a bird or between the eye and the nostril of a snake or fish (Neufeldt and Guralnik 1994).

**Lotic** Pertaining to running water, as in streams (Cole 1994).

**Macrohabitat** Habitat that can be measured accurately by using a 1–km<sup>2</sup> (0.4–mi<sup>2</sup>) pixel (Wisdom et al. 2000).

**Macrophytes** Aquatic plants that are large enough to be seen with the naked eye (StreamNet 2004).

**Main stem** The principle channel of a drainage system into which other smaller streams or rivers flow (StreamNet 2004).

**Mantle** A heavy fold of tissue in mollusks that drapes over the visceral mass and may secrete a shell (Campbell 1987).

**Maritime** Of, relating to, or bordering on the sea (Mish 1999).

**Marsh (freshwater)** Open wetlands that occur along rivers and lakes (StreamNet 2004).

**Mass extinction** The extinction of large numbers of taxa during a relatively brief geologic time frame, such as the extinction of dinosaurs at the end of the Cretaceous Period (Meffe et al. 1994).

**Mast** Fruit of the oak, beech, or other forest trees; used as food by birds and other animals (Wisdom et al. 2000).

**Maternity colony** where many female bats congregate and have their young (Washington Department of Fish and Wildlife 2005).

**Maximum sustained yield (MSY)** The largest harvest level of a renewable resource that can be sustained over a period of many generations. Harvest of a natural population at the population size representing the maximum rate of recruitment into the population, based on a logistic growth curve (Meffe et al. 1994).

**Mesic** Referring to habitats with plentiful rainfall and well–drained soils (Ricklefs and Miller 2000).

**Metamorphosis** An abrupt change in form during development that fundamentally alters the function of the organism (Ricklefs and Miller 2000).

**Metapopulation** A set of local populations occupying an array of habitat patches and connected to one another by the movement of individuals among them (Ricklefs and Miller 2000). Extinctions and recolonizations characterize metapopulations (Pickett and Rogers 1997).

**Microbiotic crust** A soil crust formed by lichens, moss, or algae that aids in stabilizing soils in and environments, reducing their susceptibility to wind erosion. Prone to deterioration resulting from trampling or air pollution. Also referred to as cryptogamic crust (Wisdom et al. 2000).

**Microhabitat** The particular parts of the habitat that an individual encounters in the course of its activities (Ricklefs and Miller 2000).

**Migratory** Refers to animals that travel seasonally. Migrations may be local or over long distances (California Department of Fish and Game 2003).

**Minimum dynamic area** The smallest area necessary for a reserve to have a complete, natural disturbance regime in which discrete habitat patches may be colonized from other patches within the reserve (Meffe et al. 1994).

**Minimum viable population size** The smallest isolated population size that has a specified percent chance of remaining extant for a specified period of time in the face of foreseeable demographic, genetic, and environmental stochasticities, plus natural catastrophes (Meffe et al. 1994).

**Mist-net** Used to capture wildlife such as birds and bats for banding or other research projects. The mesh net is typically made of nylon and resembles an oversized volleyball net. When properly deployed, the nets are virtually invisible. The grid size of the mesh netting varies according to the size of the species targeted for capture (Wikipedia 2005a).

**Mitigate** (1) To cause to become less harsh or hostile. (2) To make less severe or painful (Mish 1999).

**Mobile link species** Mobile keystone species who influence the survival or reproductive success of other species through their movement over a geographic area; e.g., highly specific pollinators (Meffe et al. 1994).

**Model** Any formal representation of the real world. A model may be conceptual, diagrammatic, mathematical, or computational (Morrison and Hall 2002).

**Mollusks** A taxonomic group of invertebrate organisms which includes clams, mussels, snails, and slugs (California Department of Fish and Game 2003).

**Molt** To cast off or shed the exoskeleton, hair, outer skin, horns, or feathers at certain intervals, prior to replacement by new growth (Neufeldt and Guralnik 1994).

**Monetizing** The process of placing monetary value on typically non-monetary goods and processes such as biological material or ecological processes. The process of converting values to economic units (Meffe et al. 1994).

**Monitoring** A repeated assessment of status of a species, habitat, or attribute within a defined area over a specified time period. The goal is to detect important changes in status (Thompson et al. 1998).

**Monitoring, compliance** Asks the question "did the organization do what it said it would?" (Schoonmaker and Luscombe 2005)

**Monitoring, effectiveness** Asks the question "did the organization's action accomplish the stated proximate goal (the objective) to be accomplished by the action" (Schoonmaker and Luscombe 2005).

**Monitoring, validation** Asks the question "did the organization's action accomplish the stated goal (usually broader than an objective) to be accomplished by the action. Did it result in a positive outcome for the habitat or species?" (Schoonmaker and Luscombe 2005).

**Monomorphic** Description of a population in which nearly all individuals have the same genotype at a given locus (Meffe et al. 1994).

**Monophyletic** Derivation of two or more taxa from a single, common ancestor (Meffe et al. 1994).

**Monotypic** Having only one type, as a genus consisting of only one species (Neufeldt and Guralnik 1994).

**Montane** A cool, moist environment usually timberline and usually dominated by conifers (Neufeldt and Guralnik 1994).

**Moraine** A mound, ridge, or other distinct accumulation of unsorted, unstratified glacial drift, predominantly till, deposited chiefly by direct action of glacier ice, in a variety of topographic landforms that are independent of control by the surface on which the drift lies (Bates and Jackson 1980).

**Morphology** The structure, form and appearance of an organism (StreamNet 2004).

**Mosaic** Something (for example, landscape) resembling a mosaic (Mish 1999).

**Mudflat** A level tract lying at little depth below the surface of water or alternately covered and left bare by the tide (Mish 1999).

**Multiple Use Concept** Refers to the simultaneous and compatible use of public land and water resources by different interest groups. For example, U.S. public law requires that national forests be open to recreational use, timber extraction, mining or other concessions, and biodiversity protection. In reality, the activities of the various interest groups generally conflict, and are often incompatible with biodiversity protection (Meffe et al. 1994).

**MUM** Acronym for “Multiple Use Module,” consisting of a central, protected core area surrounded by buffer zones of increasing human use further from the core (Meffe et al. 1994).

**Muskegs** A kind of bog or marsh containing thick layers of decaying vegetable matter, mosses (Neufeldt and Guralnik 1994).

**MUSYA** Multiple Use Sustained Yield Act.

**Mutation** A spontaneous change in the genotype of an organism at the gene, chromosome, or genomic level. Mutations usually refer to alterations to new allelic forms, and represent new material for evolutionary change (Meffe et al. 1994).

**Mutualism** An interspecific relationship in which both organisms benefit, frequently a relationship of complete dependence. Examples include flower pollination and parasite cleaning (Meffe et al. 1994).

**NAS** National Audubon Society.

**Native** Naturally occurring in a specified geographic region (California Department of Fish and Game 2003).

**Natural catastrophe** A major environmental cause of mortality, such as a volcanic eruption, that can affect the probability of survival for both large and small populations (Meffe et al. 1994).

**Natural community** General term often used synonymously with habitat or vegetation type (California Department of Fish and Game 2003).

**Natural Heritage Program** A member program in a network under NatureServe. These programs gather, manage, and distribute detailed information about the biological diversity found within their jurisdictions. Most United States natural heritage programs are within state government agencies, while others are within universities or field offices of The Nature Conservancy (California Department of Fish and Game 2003).

**Natural hydrologic regime** The original regime of water movement, unaltered by anthropogenic activities (Wisdom et al. 2000).

**Natural selection** A process by which differential reproductive success of individuals in a population results from differences in one or more hereditary characteristics. Natural selection is a function of genetically based variation in a trait, fitness differences (differential reproductive success) among individuals possessing different forms of that trait, and inheritance of that trait by offspring (Meffe et al. 1994).

**NAWMP** North American Waterfowl Management Plan.

**Necropsy** Examination of a dead body (Neufeldt and Guralnik 1994).

**Needle-leaved evergreen** Woody gymnosperms with green, needle-shaped, or scale-like leaves (e.g., black spruce) that are retained by plants throughout the year (Cowardin et al. 1979).

**Neotropical migrant** A bird species that nests in Canada or the United States and winters in the Neotropics (between the Tropics of Cancer and Capricorn) in Mexico, the Caribbean Islands, or Central or South America (Wisdom et al. 2000).

**NEPA** National Environmental Policy Act.

**Nested subset** A pattern of species biogeographic distribution in which larger habitats contain the same subset of species in smaller habitats, plus new species found only in the larger habitat. Common species are found in all habitat sizes, but some species are found only in progressively larger habitats (Meffe et al. 1994).

**Network** A reserve system connecting multiple nodes and corridors into a landscape that allows material and energy flow among the various components (Meffe et al. 1994).

**NFMA** National Forest Management Act.

**NFWF** National Fish and Wildlife Foundation.

**Niche** The ecological role of a species in the community; the many ranges of conditions and resource qualities within which the organism or species can persist, often conceived as a multidimensional space (Ricklefs and Miller 2000).

**NMFS** National Marine Fisheries Service.

**NOAA** National Oceanic and Atmospheric Administration.

**NOAA Fisheries (Service)** NOAA's National Marine Fisheries Service.

**Node** An area with unusually high conservation value that may serve as one center of a regional conservation network (Meffe et al. 1994).

**Nocturnal** Characteristically active during darkness (NatureServe 2005).

**Nonequilibrium** A condition in which the rate of increase does not equal the rate of decrease. In nonequilibrium population growth, environmental stochasticity disrupts the equilibrium (Meffe et al. 1994).

**Nongame wildlife** All wild vertebrate and invertebrate animals not subject to sport hunting (StreamNet 2004).

**Non–vascular plant** A plant without specialized tissues for conducting water and nutrients. Mosses are one example (California Department of Fish and Game 2003).

**NPS** National Park Service.

**Nymph** Adult–like immature stage of an arthropod, especially an insect, with direct development (Ricklefs and Miller 2000).

**Obligate species** A plant or animal that occurs only in a narrowly defined habitat such as tree cavity, rock cave, or wet meadow (StreamNet 2004).

**Objective** The proximate and measurable manifestation of a goal (Schoonmaker and Luscombe 2005).

**Old–growth forest** A forest stand usually at least 180 – 220 years old with moderate to high canopy closure; a multilayered, multispecies canopy dominated by large overstory trees; high incidence of large trees; some with broken tops and other indicators of old and decaying wood (decadence); numerous large snags; and heavy accumulations of wood, including large logs on the ground (StreamNet 2004).

**Olfactory** Of the sense of smell (California Department of Fish and Game 2003).

**Omnivores** Taxa that feed on both plant and animal materials (Simpson and Wallace 1978).

**Outcrop** (1) A coming out of bedrock or of an unconsolidated deposit to the surface of the ground. (2) The part of a rock formation that appears at the surface of the ground. (3) To project from the surrounding soil (Mish 1999).

**Outwash** See Glacial outwash.

**Overdominance** The condition in which a heterozygote at a given locus has higher fitness than either homozygote. Also called heterozygote superiority (Meffe et al. 1994).

**Overstory** Trees that provide the uppermost layer of foliage in a forest with more than one roughly horizontal layer of foliage (StreamNet 2004).

**Oxbow lakes** Broad bends of the former river cut off by shifts in the main channel (Ricklefs and Miller 2000).

**Palustrine** Describes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean–derived salts is below 0.5 ppt [parts per thousand]. It also

includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2 m at low water; and (4) salinity due to ocean-derived salts less than 0.5 [ppt] (Cowardin et al. 1979).

**Panmictic** Random breeding among individuals of a population (Meffe et al. 1994).

**Paradigm** An established pattern of thinking. Often applied to a dominant ecological or evolutionary viewpoint, e.g., during earlier decades the dominant paradigm held that communities were shaped by equilibrial processes (Meffe et al. 1994).

**Parapatric** Having some overlap of geographic distributions with the potential for gene flow between populations. See sympatric and allopatric (StreamNet 2004).

**Parasitism** Condition where one organism benefits from feeding on, securing shelter from, or otherwise harming the other organism (Krebs 1994).

**Parr** The developmental life stage of salmon and trout between alevin and smolt, when the young have developed parr marks and are actively feeding in fresh water (StreamNet 2004).

**Partner** Any entity who voluntarily participates with another on a project (U.S. Fish and Wildlife Service 2005).

**Partnership** An informal or formal effort by two or more partners to achieve a shared objective or complete a project (U.S. Fish and Wildlife Service 2005).

**Parvovirus** Any of a group of small single-stranded DNA viruses pathogenic for vertebrates (Mish 1999).

**Past threats** Threats that have occurred in the past, but are no longer active (although their effects on targets may still persist) (Salafsky et al. 2003).

**Patch** A recognizable area on the surface of the earth that contrasts with adjacent areas and has definable boundaries (Pickett and Rogers 1997).

**Patch dynamics** A conceptual approach to ecosystem and habitat analysis that emphasizes dynamics of heterogeneity within a system. Diverse patches of habitat created by natural disturbance regimes are seen as critical to maintenance of diversity (Meffe et al. 1994).

**Pathogen** Any agent that causes disease, such as a virus, protozoan, bacterium or fungus (StreamNet 2004).

**Perennial** Referring to an organism that lives for more than one year; lasting throughout the year (Ricklefs and Miller 2000).

**Perennial streams** Streams which flow continuously (StreamNet 2004).

**Permit** Permits enable the public to engage in legitimate wildlife-related activities that would otherwise be prohibited by law (U.S. Fish and Wildlife Service 2005).

**Phalangid** One of the Phalangioidea, a division of Arachnoidea, including the daddy longlegs or harvestman (Phalangium) and many similar kinds. They have long, slender, many-jointed legs; usually a rounded, segmented abdomen; and chelate jaws. They breathe by tracheae. Called also Phalangides, Phalangioidea, Phalangiida, and Opilionea (Farlex 2005).

**Phenology** Study of the periodic phenomena of animal and plant life and their relations to the weather and climate (Krebs 1994).

**Phenotype** The physical expression (outward appearance) of a trait of an organism, which may be due to genetics, environment, or an interaction of the two (Meffe et al. 1994).

**Phylogenetic species concept (PSC)** A species concept based on branching, or cladistic relationships among species or higher taxa. The PSC presents a hypothesis of the true genealogical relationship among species, based on the concept of shared, derived characteristics (Meffe et al. 1994).

**Phylogeny** The pattern of evolutionary relationships among species or other taxonomic groups (Ricklefs and Miller 2000).

**Phylogeographic** Evolutionary relationships among species populations based on geographic relationships and historical gene flow patterns (Meffe et al. 1994).

**Phytoplankton** Microscopic free-floating plants (Simpson and Wallace 1978).

**PIF** Partners in Flight is a coalition of federal, state, and local government agencies; non-governmental organizations (NGOs); philanthropic foundations; and industry that is working to conserve the birds of the Western Hemisphere (Beissenger et al. 2000).

**Piscivores** Taxa that eat fishes (NatureServe 2005).

**Pitfall trap** A container situated in the ground and level with the ground. Pitfall traps are used to trap ground dwelling insects and small mammals, such as shrews.

**Plain** An extensive area of level or rolling treeless country (Mish 1999).

**Plankton** All free-floating plants and animals (usually microscopic) whether they be alive or dead (Simpson and Wallace 1978).

**Plant alliance** A level of classification for vegetation types generally based upon the dominant plant species in the uppermost or dominant layer of vegetation (California Department of Fish and Game 2003).

**Plant association** A level of classification for vegetation types below plant alliance and defined by the most characteristic species associated with a plant alliance. Many plant associations may be nested within a single plant alliance just like many species may be nested within a single genus (California Department of Fish and Game 2003).

**Plant community** A group of one or more populations of plants in a common spatial arrangement (FSM 2060).

**Plasticity** Genetically-based, environmentally-induced variation in characteristics of an organism (Meffe et al. 1994).

**Plateau** A usually extensive land area having a relatively level surface raised sharply above adjacent land on at least one side (Mish 1999).

**Playa** Term used in the southwestern U.S. for a dry, vegetation-free, flat area at the lowest part of an undrained desert basin, underlain by stratified clay, silt, or sand, and commonly by soluble salts (Bates and Jackson 1980).

**Plesiomorphic** An evolutionarily primitive character shared by two or more taxa. See synapomorphic (Meffe et al. 1994).

**Plumage** A bird's feathers, collectively (Pettingill 1985).

**Plume** Plumage or down (Neufeldt and Guralnik 1994).

**Point richness** The number of species found at a single point in space (Meffe et al. 1994).

**Polymorphic** Description of a population in which individuals have two or more genotypes at a given locus (Meffe et al. 1994).

**Pond** Body of water smaller than a lake, often artificially formed (StreamNet 2004).

**Pool** A reach of stream that is characterized by deep low velocity water and a smooth surface (StreamNet 2004).

**Population** Group of individuals of the same species occupying a defined locality during a given time that exhibit reproductive continuity from generation to generation (StreamNet 2004).

**Population viability** The likelihood of continued existence of a well–distributed population or species for a specified period. For most scientific analyses, the period is 100 years. For example, high viability is a high likelihood of continued existence of well–distributed populations for a long period (a century or longer) (Wisdom et al. 2000).

**Population viability analysis (PVA)** A comprehensive analysis of the many environmental and demographic factors that affect survival of a population, usually applied to small populations at risk of extinction (Meffe et al. 1994).

**Potential natural community** The biotic community that would be established if all successional sequences of its ecosystem were completed without additional human–caused disturbance under present environmental conditions. Grazing by native fauna, natural disturbances, such as drought, floods, fire, insects, and disease, are inherent in the development of potential natural communities which may include naturalized exotic species (McNab and Avers 1994).

**Pothole** A shallow depression, generally less than 10 acres in area, occurring between dunes on a prairie, often containing an intermittent pond or marsh and serving as a nesting place for waterfowl (Bates and Jackson 1980).

**Precision** The closeness to each other of repeated measurements of the same quantity; not synonymous with accuracy (Zar 1984:4).

**Precocial** Born in a relatively well–developed condition (eyes open, able to move) and requiring minimal parental care (Feldhamer et al. 1999).

**Predation** The act of killing and eating other animals (California Department of Fish and Game 2003).

**Preservation** Generally, the non–use of natural resources. Compare with conservation (California Department of Fish and Game 2003).

**Pre–smolt** A juvenile salmon or steelhead that has not yet reached the physiological state known as a smolt (StreamNet 2004).

**Pressure indicator** Represents the level of a pressure or stressor that affects a natural resource (Schoonmaker and Luscombe 2005).

**Primary excavator** A species that digs or chips out cavities in wood to provide itself or its mate with a site for nesting or roosting (Wisdom et al. 2000).

**Problem** An obstacle to achieving a goal or objective (StreamNet 2004).

**Productivity** A measure of the capacity of a biological system. Also used as a measure of the efficiency with which a biological system converts energy into growth and production (StreamNet 2004).

**Properly Functioning Condition (PFC)** When adequate vegetation, landform, or large woody debris is present to: dissipate stream energy associated with high waterflow, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve floodwater retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics *to provide* the habitat and the water depth, duration, and temperature necessary for fish production, waterfowl breeding, and other uses; support greater biodiversity (USDI 1998).

**Proposed species** A species of animal or plant that is proposed in the Federal Register to be listed under section 4 of the Endangered Species Act (U.S. Fish and Wildlife Service 2005).

**Province** An ecological unit in the ecoregion planning and analysis scale of the National Hierarchical Framework corresponding to subdivisions of a Division that conform to climatic subzones controlled mainly by continental weather patterns (ECOMAP 1993).

**Quad** Defined here as a 7.5-minute quadrangle published by the United States Geological Survey (USGS) at a scale of 1:24,000 (California Department of Fish and Game 2003).

**Quarry** An open excavation usually for obtaining building stone, slate, or limestone (Mish 1999).

**Radio-telemetry** Automatic measurement and transmission of spatial data from remote sources via radio to a receiving station for recording and analysis (StreamNet 2004).

**Range** Defined here as the maximum geographic extent of a taxon or habitat; does not imply suitable conditions exist throughout the defined limits. Compare with distribution (California Department of Fish and Game 2003).

**Rapids** A reach of stream that is characterized by small falls and turbulent high velocity water (StreamNet 2004).

**Raptor** A bird of prey, adapted for seizing and tearing prey (StreamNet 2004).

**Rarity** Used here as a measure of sensitivity for those taxa that have special status due to very limited distribution, low population levels, or immediate threat. An area high in rarity has many taxa that meet this definition (California Department of Fish and Game 2003).

**Ravine** A small narrow steep-sided valley that is larger than a gully and smaller than a canyon and that is usually worn by running water (Mish 1999).

**Reach** A section of stream between two defined points (StreamNet 2004).

**Rear** To feed and grow in a natural or artificial environment (StreamNet 2004).

**Reclassify** To change a species' official status from threatened to endangered or vice-versa (U.S. Fish and Wildlife Service 2005).

**Recolonization** The reestablishment of an organism in a habitat that it previously occupied (StreamNet 2004).

**Recovery** Action that is necessary to reduce or resolve the threats that caused a species to be listed as threatened or endangered (StreamNet 2004).

**Recovery permit** A permit issued under section 10(a)(1)(A) of the Endangered Species Act for scientific research and other activities benefiting the recovery of federally listed species; allows for research pertaining to species recovery, such as taking blood samples from a peregrine falcon for genetic analysis, or conducting surveys of freshwater mussel beds to determine species status and distribution (U.S. Fish and Wildlife Service 2005).

**Redds** Structures prepared by fishes for deposition of eggs, consisting of a depression in the stones and sand. Typical for most trout and salmon (Simpson and Wallace 1978).

**Reforestation** The natural or artificial replanting of an area with forest trees (StreamNet 2004).

**Regional scale** With respect to corridors, the largest scale of activity, in which major swaths of habitat connect regional networks of reserves (Meffe et al. 1994).

**Remote sensing** Any technique for analyzing landscape patterns and trends using low altitude aerial photography or satellite imagery. Any environmental measurement that is done at a distance (Meffe et al. 1994).

**Reproduce** To produce offspring (StreamNet 2004).

**Rescue effect** The recolonization of a habitat when a subpopulation of a metapopulation has gone locally extinct (Meffe et al. 1994).

**Reservoir** A body of water collected and stored in an artificial lake behind a dam (StreamNet 2004).

**Resident** Refers to animal taxa which remain in a given location throughout the year (California Department of Fish and Game 2003).

**Residuals** In restoration ecology, the remnants of natural systems that can provide the building blocks for system restoration or rehabilitation.

**Resolution** The smallest spatial scale at which we portray discontinuities in biotic and abiotic factors in map form (Hargis et al. 1997).

**Resource** Any biotic and abiotic factor directly used by an organism (Morrison and Hall 2002).

**Resource abundance** The absolute amount (or size or volume) of an item in an explicitly defined area (Morrison and Hall 2002).

**Resource availability** A measure of the amount of a resource actually available to the animal (i.e., the amount exploitable) (Morrison and Hall 2002).

**Resource preference** The likelihood that a resource will be used if offered on an equal basis with others (Manly et al. 1993).

**Resource selection** The process by which an animal chooses a resource (Morrison and Hall 2002).

**Resource use** A measure of the amount of resource taken directly (e.g., consumed, removed) from an explicitly defined area (Morrison and Hall 2002).

**Response indicator** Indicates the level of human action taken to reduce the pressure on a value of interest (Schoonmaker and Luscombe 2005).

**Restoration** The renewing or repairing of a natural system so that its functions and qualities are comparable to its original, unaltered state (StreamNet 2004).

**Restoration ecology** The process of using ecological principles and experience to return a degraded ecological system to its former or original state (Meffe et al. 1994).

**Rhyolite** A very acid volcanic rock that is the lava form of granite (Mish 1999).

**Richness** The total number of plant taxa, animal species, or vegetation types in a given area (California Department of Fish and Game 2003).

**Riffle** A reach of stream that is characterized by shallow, fast moving water broken by the presence of rocks and boulders (StreamNet 2004).

**Riparian** A narrow zone, which may or may not be vegetated, directly associated with streambanks or lake shores, or similar immediately adjacent habitat (NatureServe 2005).

**Riparian area** Area with distinctive soils and vegetation between a stream or other body of water and the adjacent upland; includes wetlands and those portions of flood plains and valley bottoms that support riparian vegetation (Wisdom et al. 2000).

**Riparian habitat** The aquatic and terrestrial habitat adjacent to streams, lakes, estuaries, or other waterways (StreamNet 2004).

**Riparian vegetation** The plants that grow rooted in the water table of a nearby wetland area such as a river, stream, reservoir, pond, spring, marsh, bog, meadow, etc. (StreamNet 2004).

**Riprap** A foundation or sustaining wall of stones or chunks of concrete thrown together without order; also a layer of this or similar material on an embankment slope to prevent erosion (Mish 1999).

**River basin** See Watershed.

**Roe** Eggs of fishes (StreamNet 2004).

**Roost** To rest, sit, sleep, etc. on a perch (Neufeldt and Guralnik 1994).

**Root cause** See Underlying cause.

**Run (in stream or river)** A reach of stream characterized by fast flowing low turbulence water (StreamNet 2004).

**Runoff** Water that flows over the ground and reaches a stream as a result of rainfall or snowmelt (StreamNet 2004).

**Salinity** The concentration of salt in a body of water. The salinity of a saltwater wetland changes whenever freshwater is added when it rains, and each time the saltwater is added or removed when tide rises and falls (StreamNet 2004).

**Salmonids** Collective term for a family of fish that includes salmon and trout (California Department of Fish and Game 2003).

**Sand** Small substrate particles, generally referring to particles less than 2 mm in diameter. Sand is larger than silt and smaller than cobble or rubble (StreamNet 2004).

**Sarcoptic mange** Commonly known as scabies and caused by an external parasite that burrows deep into the skin. It is caused by a mite called *Notoedres* ([http://www.lbah.com/sarcoptic\\_mange.htm](http://www.lbah.com/sarcoptic_mange.htm)).

**Scale** (1) The degree of resolution at which ecological processes, structures, and changes across space and time are observed and measured, perceived, or represented

(ECOMAP 1993). (2) The relationship between distance on a map and distance on the surface of the earth. Scale may be expressed with distance units (e.g., 1 inch = 200 feet) or without distance units (e.g., 1:24,000) (California Department of Fish and Game 2003).

**Scale of observation** The spatial and temporal scales at which observations are made. Scale of observation has two parts: extent and grain (Morrison and Hall 2002).

**Scientific name** A formal Latin or latinized name applied to a taxonomic group of animals or plants. A species' scientific name is a two-part combination consisting of the genus followed by the species. The name is italicized or underlined. For example, the scientific name of the little brown bat is *Myotis lucifugus*. The genus name is *Myotis*, and the species name is *lucifugus*. If an animal species has been further divided into subspecies, or a plant species further divided into varieties, a third part is added to the scientific name. The Arizona bat is *Myotis lucifugus occultus*; "occultus" distinguishes the Arizona subspecies from other subspecies of the little brown bat (U.S. Fish and Wildlife Service 2005).

**Scientific take permit** See Recovery permit.

**Scrub** (1) A stunted tree or shrub. (2) Vegetation consisting chiefly of scrubs (Mish 1999).

**Secondary extinctions** Loss of a species a direct or indirect result of loss of another species (Meffe et al. 1994).

**Section** An ecological unit in the subregion planning and analysis scale of the National Hierarchical Framework corresponding to subdivisions of a Province having broad areas of similar geomorphic process, stratigraphy, geologic origin, drainage networks, topography, and regional climate. Such areas are often inferred by relating geologic maps to potential natural vegetation groupings as mapped by Kuchler (1964) (ECOMAP 1993).

**Sediment** Organic material that is transported and deposited by wind and water (StreamNet 2004).

**Sedimentation** Deposition of sediment (StreamNet 2004).

**Selection harvest** Uneven-aged silvicultural system in which trees are removed singly or in small groups from a large area each year. Regeneration is primarily natural, and the stand is ideally composed of many ages (Wisdom et al. 2000).

**Seep** A place where water oozes from the ground to form a pool (Neufeldt and Guralnik 1994).

**Sensitive species** Those species that (1) have appeared in the Federal Register as proposed for classification and are under consideration for official listing as endangered

or threatened species or (2) are on an official state list or (3) are recognized by the U.S. Forest Service or other management agency as needing special management to prevent their being placed on federal or state lists (StreamNet 2004).

**Sentient** Capable of feeling or perception. Refers to a state of self-awareness among organisms, usually applied only to vertebrates (Meffe et al. 1994).

**Seral stage** The developmental stages of a plant community not including the climax community (Wisdom et al. 2000).

**Setae** Sensory hairs on the feet and mouthparts of insects in which taste receptors are located (Campbell 1987).

**Shrub steppe** Habitats characterized in western North America by woody, midheight shrubs and perennial bunchgrasses; typically arid, with annual precipitation averaging <36 cm (14 in) over much of the region (Wisdom et al. 2000).

**Sibling species** See Cryptic species.

**Silt** Substrate particles smaller than sand and larger than clay (StreamNet 2004).

**Sink** A habitat in which local mortality exceeds local reproductive success for a given species (Meffe et al. 1994).

**Sink populations** Populations for which the local birth rate is less than the local death rate and the immigration rate is greater than zero. Sink populations cannot persist in isolation because the birth rate does not exceed the death rate. Sink population are net "importers" of individuals, and they depend on external immigration for their persistence (Gotelli 1998).

**Site** An area of uniform physical and biological properties and management status (contrast with Study Area) (Morrison and Hall 2002).

**Sloughs** A swamp, bog, or marsh, especially one that is part of an inlet or backwater (Neufeldt and Guralnik 1994).

**Slope** The side of a hill or mountain, the inclined face of a cutting, canal or embankment or an inclination from the horizontal (StreamNet 2004).

**Smolt** Refers to the salmonid or trout developmental life stage between parr and adult, when the juvenile is at least one year old and has adapted to the marine environment (StreamNet 2004).

**Smoltification** Refers to the physiological changes anadromous salmonids and trout undergo in freshwater while migrating toward saltwater that allow them to live in the ocean (StreamNet 2004).

**Snag** A standing dead tree from which the leaves and most of the branches have fallen (Wisdom et al. 2000).

**Source** A habitat in which local reproductive success exceeds local mortality for a given species (Meffe et al. 1994).

**Source and sink dynamics** Spatial linkage of population dynamics such that high-quality habitats (sources) provide excess individuals that maintain population density, through migration, in low-quality habitats (sinks) (Meffe et al. 1994).

**Source population** Populations for which the local birth rate exceeds the local death rate, and emigration rate is greater than zero. Source populations are net “exporters” of individuals (Gotelli 1998).

**Spatial** Relating to, occupying, or having the character of space (Mish 1999).

**Spatially–explicit population model** A population model, especially a simulation model, that takes space, differences in habitat quality, and inter–habitat movement into consideration (Meffe et al. 1994).

**Spawn** The act of reproduction of fishes. The mixing of the sperm of a male fish and the eggs of a female fish (StreamNet 2004).

**Spawning surveys** Spawning surveys use counts of redds and fish carcasses to estimate spawner escapement and identify habitat being used by spawning fish. Annual surveys can be used to compare the relative magnitude of spawning activity between years (StreamNet 2004).

**Speciation** The natural process by which new species evolve from existing ones (StreamNet 2004).

**Species** The highest level of biological classification from which organisms can breed and produce fertile offspring under natural conditions (California Department of Fish and Game 2003).

**Species diversity** Usually synonymous with “species richness,” but may also include the proportional distribution of species (Meffe et al. 1994).

**Species problem** Ambiguity of the species category and definition. The species problem—what species definition(s) to use, and what constitutes species—has been with us for decades and is unlikely to be completely resolved in the near future (Meffe et al. 1994).

**Species richness** The number of species in a region, site, or sample (Meffe et al. 1994).

**Spring** A source of water issuing from the ground (Mish 1999).

**Stakeholder** Any person or organization who has an interest in the actions discussed or is affected by the resulting outcomes of a project or action (U.S. Fish and Wildlife Service 2005).

**Stalagmite** A deposit of calcium carbonate like an inverted stalactite formed on the floor of a cave by the drip of calcareous water (Mish 1999)

**Stand-replacing fire** A high-intensity crown fire in which most of the trees are killed (Wisdom et al. 2000).

**State (or condition) indicator** Describes the current state or condition of a natural resource (Schoonmaker and Luscombe 2005).

**Stenotopic** Having a narrow range of tolerances for environmental conditions (Ricklefs and Miller 2000).

**Steppe** Extensive area of natural, dry grassland; usually in reference to grasslands in southwestern Asia and southeastern Europe (Krebs 1994).

**Stewardship** Management of natural resources that conserves them for future generations. Usually used to distinguish from short-term, utilitarian management objectives (Meffe et al. 1994).

**Stochastic** Of, pertaining to, or arising from random or chance events in nature (Gotelli 1998).

**Stock** A specific population of fish spawning in a particular stream during a particular season (StreamNet 2004).

**Stream** A general term for a body of flowing water; natural water course containing water at least part of the year. In Hydrology, the term is generally applied to the water flowing in a natural channel as distinct from a canal. More generally, as in the term Stream Gaging, it is applied to the water flowing in any channel, natural or artificial (StreamNet 2004).

**Stream channel** The bed where a natural stream of water runs or may run; the long narrow depression shaped by the concentrated flow of a stream and covered continuously or periodically by water (StreamNet 2004).

**Streambed** The channel through which a natural stream of water runs or used to run, as a dry streambed (StreamNet 2004).

**Strip corridor** A broad corridor consisting of some interior habitat and intact and functioning communities (Meffe et al. 1994).

**Structural diversity** Diversity in a forest stand that results from layering or tiering of the canopy (Wisdom et al. 2000).

**Study area** A spatial extent chosen by the investigator within which to conduct a study (contrast with Site and Scale) (Morrison and Hall 2002).

**Subalpine** Mountain regions just below timberline (Neufeldt and Guralnik 1994).

**Subenvelop** The general altitude of the drainage network that portrays differences in stream gradient from one geomorphic unit to another (McNab and Avers 1994).

**Subnivean** Beneath the surface of the snow (Wisdom et al. 2000).

**Subpopulation** A well-defined set of interacting individuals that compose a proportion of a larger, interbreeding population (StreamNet 2004).

**Subregion** A scale of planning and analysis in the National Hierarchical Framework that has applicability for strategic, multi-forest, statewide, and multi-agency analysis and assessment. Subregions include Section and Subsection ecological units (McNab and Avers 1994).

**Subsection** An ecological unit in the subregion planning and analysis scale of the National Hierarchical Framework corresponding to subdivisions of a Section into areas with similar surficial geology, lithology, geomorphic process, soil groups, subregional climate, and potential natural communities (ECOMAP 1993).

**Subspecies** (1) A population of a species occupying a particular geographic area, or less commonly, a distinct habitat, capable of interbreeding with other populations of the same species (StreamNet 2004). (2) The level of biological classification below species; a genetically-distinct group (California Department of Fish and Game 2003).

**Substrate** The composition of a streambed, including either mineral or organic materials (StreamNet 2004).

**Subterranean** Lying beneath the earth's surface; underground (Neufeldt and Guralnik 1994).

**Succession** A series of dynamic changes by which one group of organisms succeeds another through stages leading to potential natural community or climax (StreamNet 2004).

**Supply** The aggregate amount of goods or services available to satisfy economic needs or wants. The quantity of a good or service which producers are willing to sell at

different prices. Supply involves the relationship between quantity and price (Meffe et al. 1994).

**Sustainable development** There is considerable debate over the meaning of this term. Most generally it refers to attempts to meet economic objectives in ways that do not degrade the underlying environmental support system (Meffe et al. 1994).

**Swales** A hollow depression, or low area of land (Neufeldt and Guralnik 1994).

**Swamp (freshwater)** A piece of wet, spongy land that is permanently or periodically covered with water; characterized by growths of shrubs and trees (Neufeldt and Guralnik 1994).

**Sympatric** Occupying the same geographic area. See parapatric and allopatric (StreamNet 2004).

**Synapomorphic** An evolutionary–derived or advanced character shared by two or more taxa. See plesiomorphic (Meffe et al. 1994).

**Take** To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct; may include significant habitat modification or degradation if it kills or injures wildlife by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering (U.S. Fish and Wildlife Service 2005).

**Talus** Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes (Wisdom et al. 2000).

**Target** Goal or objective with a deadline (i.e., how much by when). Targets specify expected results for a given period of time and provide measurable milestones that help gauge progress toward an objective (e.g., restore 1000 acres of oak woodland by 2040). Targets can be a discrete number or a range between two numbers (Schoonmaker and Luscombe 2005).

**Taxon** A term that is applied to a group in biological classification, for example, species, subspecies, variety, or evolutionarily significant unit (ESU). The plural is taxa (California Department of Fish and Game 2003).

**Taxonomic group** Used here to refer to organisms at the same level of organization in biological classification, for example, kingdom, phylum, class, or order (California Department of Fish and Game 2003).

**Tectonic plate** One of the many large plates which make up the crust of the earth and move slowly around it, sometimes colliding with or pulling apart from other plates (California Department of Fish and Game 2003).

**Telemetry** See Radio–telemetry.

**Temperate** A classification of climate based on the Koppen System for regions where there are four to eight months warmer than 10°C (50°F) and the coldest month is cooler than 0°C (32°F) (Bailey 1980).

**Temporal** Of or relating to time as distinguished from space (Mish 1999).

**Terrace** A level ordinarily narrow plain usually with steep front bordering a river, lake, or sea (Mish 1999).

**Terrain** (1) A geographical area. (2) A piece of land. (3) The physical features of a tract of land (Mish 1999).

**Terrestrial** Growing, living on, or frequenting land (California Department of Fish and Game 2003).

**Territory** The spatial area defended (actively or passively) by an animal or group of animals (Morrison and Hall 2002).

**Tertiary period** The period in geologic history from about 50 million years ago to about 2.7 million years ago (California Department of Fish and Game 2003).

**Thematic mapper** Landsat remote imaging system that takes 30-meter-resolution 185 x 185 km images of the earth's surface, returning to each location every 16 days (Schoonmaker and Luscombe 2005).

**Thermal** Of, relating to, or caused by heat (Mish 1999).

**Threat** Any human activity or process that has caused, is causing, or may cause the destruction, degradation and/or impairment of biodiversity and natural processes. In systems that depend on human actions to maintain biodiversity such as the use of prescribed burns, the removal or alteration of these management activities may also constitute a threat. Includes both direct threats and underlying causes. Synonymous with pressures (Salafsky et al. 2003).

**Threatened** A species officially designated by the U.S. Fish and Wildlife Service as having its existence threatened in a localized area, such as a state or smaller area, because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors (Wisdom et al. 2000).

**Thrust fault** A fracture in the rocks of the Earth's crust caused by contraction which positions older rocks over younger rocks (Encyclopædia Britannica Premium Service 2005b).

**Till** (1) Unstratified glacial drift consisting of clay, sand, gravel, and boulders intermingled. (2) To work by plowing, sowing, and raising crops (Mish 1999).

**Topography** The shape of the surface of the earth, including mountains and valleys (California Department of Fish and Game 2003).

**Toxic materials** Any liquid, gaseous, or solid substance or substances in a concentration which, when applied to, discharged to, or deposited in water or another medium may exert a poisonous effect detrimental to people or to the propagation, cultivation, or conservation of animals, or other aquatic life (StreamNet 2004).

**Transition zone** An area of reserve surrounding a buffer zone, usually with indistinct boundaries, in which human activities such as selective logging, fishing, or other sustainable pursuits, are permitted (Meffe et al. 1994).

**Translocate** To cause a change in geographic location (Neufeldt and Guralnik 1994).

**Trend** (1) A statistical term referring to the direction or rate of increase or decrease in magnitude of the individual members of a time series of data when random fluctuations of individual members are disregarded. (2) A unidirectional increasing or decreasing change in the average value of a variable (StreamNet 2004).

**Tributary** A stream that flows into another stream, river, or lake (StreamNet 2004).

**Troglobitic** Refers to obligatory cave-dwelling organisms or to obligatory hypogean organisms (Cole 1994b).

**Tundra** (1) A classification of climate based on the Koppen System for regions where the warmest month is colder than 50°F (10°C) but warmer than 32°F (0°C) (Bailey 1980). (2) Treeless area in arctic or alpine regions, varying from a bare area to various types of vegetation consisting of grasses, sedges, forbs, dwarf shrubs, lichens, and mosses (Krebs 1994).

**Umbrella species** A large-bodied, popular species having a large home range and broad requirements for habitats and resources, that can be managed to also provide habitats and resources for other species (Wisdom et al. 2000).

**Undercut** A cut made below another as to leave an overhang or concave profile (Neufeldt and Guralnik 1994).

**Underlying cause** A condition or environment, usually social, economic, political, institutional, or cultural in nature that enables or otherwise contributes to the occurrence and/or persistence of a direct threat. There is typically a chain of underlying causes behind any given direct threat. In a situation analysis, underlying causes can be subdivided into indirect threats (factors with a negative effect) and opportunities (factors with a positive effect). Synonymous with root causes and drivers (Salafsky et al. 2003).

**Understory** An underlying layer of vegetation, specifically the vegetative layer and especially the trees and shrubs between the forest canopy and the ground cover (Mish 1999).

**Ungulate** Hoofed mammal; usually adapted for running on firm, open ground, herbivorous, living in herds. Since hooves have appeared independently in several groups of mammals, Ungulate is a term obsolete in classification. Most ungulates belong to orders Artiodactyla and Perissodactyla (Abercrombie et al. 1967).

**Unicuspid** Teeth with a single cusp. Canine teeth are unicuspid, as are premolars in many species (Feldhamer et al. 1999).

**Upland** A general term referring to species, habitats, or vegetation types in non-flooded or non-saturated areas (California Department of Fish and Game 2003).

**USDA** U. S. Department of Agriculture.

**USDI** U. S. Department of the Interior.

**USFS** USDA Forest Service.

**USFWS** USDI Fish and Wildlife Service.

**Vagrant** An animal, usually migratory, straying outside of the normal range for its species (California Department of Fish and Game 2003).

**Vascular plant** A plant with specialized tissues for conducting water and nutrients. Examples are ferns and wildflowers (California Department of Fish and Game 2003).

**Vegetation type** A natural unit similar in definition to ecosystem, but defined primarily by the composition of plant species; compare also with habitat (California Department of Fish and Game 2003).

**Vernal pools** Seasonal wetlands that form in depressions on the soil surface above a water-restricting layer of soil or rock. Plant and animal taxa endemic to vernal pools are those which can adapt to a unique cycle of flooding, temporary ponding, and drying (California Department of Fish and Game 2003).

**Vertebrate** An animal with an internal skeleton. Examples are birds, mammals, reptiles, amphibians, and fishes (California Department of Fish and Game 2003).

**Viable** Able to persist over time; self-sustaining (California Department of Fish and Game 2003).

**Viable population** A population in a state that maintains its vigor and its potential for evolutionary change (StreamNet 2004).

**Viability** Strictly, the ability to live or grow. In conservation biology, the probability of survival of a population for an extended period of time (Morrison and Hall 2002).

**Vicariance** The process of a continuously distributed biota becoming separated by an intervening geographic even (such as mountain uplift or river flow), or extinction of intervening populations, resulting in subsequent independent histories of fragmented biotas, and possible speciation events (Meffe et al. 1994).

**Viviparous** Bearing live young (Simpson and Wallace 1978).

**Wash** The dry bed of a stream, particularly a watercourse associated with an alluvial fan, stream, or river channel. Washes are often associated with arid environments and are characterized by large, high energy discharges with high bed-material load transport. Washes are often intermittent and their beds sparsely vegetated (StreamNet 2004).

**Watershed** A stream or river basin and the adjacent hills and peaks which "shed," or drain, water into it (California Department of Fish and Game 2003).

**Weir (fish trap)** Usually a barrier constructed to catch upstream migrating adult fish (StreamNet 2004).

**Wet meadow** Areas where grasses predominate. Normally waterlogged within a few inches of the ground surface (StreamNet 2004).

**Wetland** There are 3 important attributes of wetlands: (1) the hydrology is such that there is some degree of flooding or soil saturation; (2) the vegetation is composed of plants adapted to grow in water or in a soil or substrate that is occasionally oxygen deficient due to saturation (hydrophytes); (3) the soils are saturated long enough during the growing season to produce oxygen deficient conditions in the upper soil layer, which commonly includes the major part of the root zone of plants (hydric soils) (NatureServe 2005).

**WHSRN** Western Hemisphere Shorebird Reserve Network.

**Wildlands** Collective term for public or private lands largely undeveloped and in their natural state (California Department of Fish and Game 2003).

**Wildlife** Game and nongame species that are not domesticated (StreamNet 2004).

**WMA** Wildlife Management Area. There are 32 WMAs located across Idaho. These areas are available for hunting, fishing, and general public use.

**Woodland** Open stands of trees at least 6 m tall, with crowns often not interlocking; tree canopy discontinuous (often clumped), averaging between two-thirds and 40% overall cover (at 40% the average diameter of a tree crown equals the average distance between crowns); shrub layer often poorly developed or present only in gaps in the canopy. Forest edge species (i.e., those dependent on a break in the canopy rather than on forest per se) are included in this category (NatureServe 2005).

**Xeric** Deficient in available moisture for the support of life (as in desert environments) (Wisdom et al. 2000).

**Yolk** The food part of an egg (StreamNet 2004).

**Zoning** An important component of reserve design which controls human activities within and adjacent to conservation reserves so that reserve function may be protected while some human activities, including economic benefit, may take place (Meffe et al. 1994).

**Zooplankton** Small free-floating aquatic animals which are mostly microscopic (Simpson and Wallace 1978).