

Glossary

Abbreviated from the full glossary in the desk guide.

- Alfisol.** A soil “having significantly more clay in the B-horizon than in the A-horizon and high base status.” A soil “with gray to brown surface horizons, medium to high supply of bases, and B horizons of illuvial clay accumulation. They form mostly under forest or savanna vegetation in climates with slight to pronounced moisture deficits.”
- Alluvial.** “Pertaining to material or processes associated with transportation or...deposition by concentrated running water.”
- Alpine.** “Those portions of mountains that rise above the cold limits of trees.”
- Annual.** “Enduring for not more than a year. A plant which completes its entire life cycle from germinating seedling to seed production and death within a year.” Often difficult to distinguish in some cases from biennial or monocarpic.
- Aquatic Ecosystem.** The distinctive ecosystem dominated by water, aquatic plants, or aquatic animals. Usually the substrate for plant and microorganism growth is water, not soil in the usual sense. Distinct from the riparian ecosystem, which is a terrestrial ecosystem, and water-dependent but where the substrate is soil. In the aquatic ecosystem, producers include phytoplanktonic algae, and autotrophic consumers include crustaceans, rotifers, and fish. Heterotrophic consumers include benthic insects, mollusks, and crustaceans. See terrestrial ecosystem and riparian ecosystem.
- Aquatic.** “Of or pertaining to water; growing in water. A plant or animal inhabiting water,” often exclusively.
- Aquepts.** A soil class: wet Entisols that are bluish or gray and mottled. See “Entisols.”
- Aquepts.** A soil class: wet Inceptisols with a gray or dark gray surface horizon and a mottled gray subsurface horizon, whose natural drainage is poor. See “Inceptisols.”
- Aquolls.** A soil class: Mollisols that are naturally wet and have high-contrast mottles below a black surface horizon. See “Mollisols.”
- Argiborolls.** A soil class: Mollisols that are cool or cold, that have an Argillic Horizon.
- Argillic Horizon.** “A mineral soil horizon that is characterized by the illuvial accumulation of layer-lattice silicate clays. The argillic horizon has a certain minimum thickness depending on the thickness of the solum, a minimum quantity of clay in comparison with an overlying eluvial horizon, depending on the clay content of the eluvial horizon, and usually has coatings of oriented clay on the surface of pores or peds or bridging sand grains.”
- Argiustolls.** A soil class: more or less freely drained Mollisols, with rainfall during a growing season and frequent drought, that have an Argillic horizon in or below the Mollic epipedon.
- Aridic.** A soil moisture regime, in which there is no moisture available for plants for more than half the cumulative time that the soil temperature is above 5°C. In the UGB, an aridic soil has lighter surface horizons than one would expect. An Aridic soil moisture often forms in an arid microclimate. Sometimes also called “Torric” moisture regime.
- Aridisols.** A soil class: soils that have developed horizons, but are low in organic matter as a result of low soil moisture, and hence are lighter in color than one would expect.
- Backslope.** “The hillslope position that forms the steepest inclined surface and principal element of many hillslopes...” Sometimes called “midslope.” See “slope position.”
- Boralfs.** A soil class: more or less freely drained Alfisols of cool places. See “Alfisols.”
- Borohemists.** A soil class: Histosols in which the organic materials have been decomposed enough that the botanic origin of as much as two-thirds cannot be readily determined, that have a Frigid but not a Cryic temperature regime. See “Histosols” and “soil temperature regime.”
- Borolls.** A soil class: cool to cold, more or less freely drained Mollisols of regions that have continental climates. See “Mollisols.”
- Bottomland.** “Low-lying, level land, usually highly fertile...; a lowland formed by deposition of alluvium along the margin of a watercourse; an alluvial plain or a flood plain; the floor of a valley.”

Boulder. A coarse fragment "larger than 60 cm in diameter."

Browse. "Twigs and shoots, with their leaves, cropped by livestock [or wildlife] from shrubs, trees, and woody vines." "The parts of shrubs, woody vine, and trees available for animal consumption."

Bunchgrass. "A perennial herbaceous grass lacking rhizomes. A caespitose or tussock grass."

Caespitose. Sometimes spelled cespitose. "Tufted: having the stems in a tuft, as a bunch grass."

Cambic Horizon. A subsurface soil horizon that is fine textured, and has been physically altered as a result of frost, roots, or animals.

Camborthids. A soil class: Aridisols that have one or more soil horizons, but do not have an Argillic horizon, but do have a Cambic horizon.

Canopy Cover. "The area of ground surface included in a vertical projection of individual plant canopies." The relative size of a polygon formed by the outer edges of the canopy of all plants of a given species. Canopy cover is usually expressed as a percentage, independently estimated for each plant species and for several non-species categories. The sum of canopy cover for all species in a plant community will be other than 100% in most, if not all, cases. See Daubenmire for a complete description of the concept. For mature trees, canopy cover is a synonym for crown cover; but canopy cover applies to all plant species, whether woody, herbaceous, or cryptogamic, and also to non-species categories such as bare soil, litter, rock, and gravel. In aquatic inventory, canopy cover is used in a different way from the above definition. I recommend that the aquatic inventory not use the term canopy cover, but rather replace it in that case with two terms, overhanging crown cover and overhang cover, in order to avoid confusion.

Channery. Flat gravel, describing the coarse fraction of a soil. "Thin, flat fragments of limestone, sandstone, or schist up to 6 in in major diameter." See Coarse fragments.

Characteristic Cover. Describing a plant species as it occurs in two or more plots, the average cover that that species has in the plots in which it occurs. Different from average cover, which is the total cover of all plots divided by the number of plots.

Clay. "1. A mineral soil separate consisting of particles less than 0.002 mm in equivalent diameter. 2. A soil textural class." See Soil Texture Triangle.

Climax. A plant community, "the highest ecological development of a plant community capable of perpetuation under the prevailing climatic and edaphic conditions."

Codominance. "Two or more species providing about equal cover which in combination controls the environment."

Colluvial. "Pertaining to material or processes associated with transportation and/or deposition by mass movement"

Community Type. A group of plant communities, clustered together because of the similarities of plant species which dominate them.

Community. A general term, applied to the assemblage of plants and/or animals occurring in one area. "A general term applying to any aggregation of organisms irrespective of its successional rank." "Any group of organisms interacting among themselves." Notice that neither the size of the group, nor the area it occupies, nor the successional status is known without further conditions being specified.

Coniferous Tree. A tree that bears cones, in our area, the spruces, firs, Douglas-fir, pines, and juniper. Some botanists would not include juniper trees.

Cover. A general term, applying to several different concepts. Very often a synonym for canopy cover. In wildlife biology, cover means "vegetation used by wildlife for protection from predators, or to ameliorate conditions of weather, or in which to reproduce." In aquatic inventory and fisheries biology, cover means "anything that provides protection from predators or ameliorates adverse conditions of streamflow and/or seasonal changes in metabolic costs. May be instream cover, turbulence, and/or overhead cover, and may be for the purposes of escape, feeding, hiding, or resting."

Cryaquents. A soil class: cold, wet Entisols of high mountains or tundra without permafrost. See "Entisols" and "permafrost."

Cryaquepts. A soil class: wet Inceptisols with poor natural drainage, that are cold or very cold, with a Cryic temperature regime. Many have permafrost at a shallow depth. See “Inceptisols” and “Cryic.”

Cryaquolls. A soil class: naturally cold, wet Mollisols that have high-contrast mottles below a black epipedon, of high altitudes or high latitudes.

Cryic. “A soil temperature regime that has mean annual soil temperature of more than 0°C but less than 8°C, more than 5°C difference between mean summer and mean winter soil temperatures at 50 cm, and cold summer temperatures.” See “soil temperature regime.”

Cryoboralfs. A soil class: more or less freely drained Alfisols of cool places, with a Cryic temperature regime. See “Alfisols” and “soil temperature regime.”

Cryoborolls. A soil class: cold, more or less freely drained Mollisols of regions that have continental climates, that have a Cryic temperature regime. See “Mollisols” and “soil temperature regime.”

Cryochrepts. A soil class: cold, light-colored, brownish, more or less freely drained Inceptisols of high mountains or high latitudes, with a Cryic temperature regime. See “Inceptisols” and “soil temperature regime.”

Cryohemists. A soil class: cold Histosols in which the organic materials have been decomposed enough that the botanic origin of as much as two-thirds cannot be readily determined, with frost layer in the soil for most of the year. See “Histosols.”

Cryorthents. A soil class: cold Entisols on recent erosional surfaces of high mountains or high latitudes. See “Entisols.”

Cryumbrepts. A soil class: cold, acid, reddish or brownish, freely drained, organic-matter-rich Inceptisols of high altitudes or high latitudes. See “Inceptisols.”

Cumulic. A soil with a Mollic epipedon more than 40 cm thick.

Decreaser. “For a given plant community, those species that decrease in amount as a result of a specific abiotic or biotic influence or management practice.” Demonstration that a common plant species is a decreaser for a site often indicates that the species is a climax dominant.

Disturbance. “An event that causes a significant change from the normal pattern in an ecological system.” Often subdivided into natural disturbances and man-caused disturbances. “Natural disturbances, such as drought, wild fires, grazing by native fauna, and insects are inherent in the development of any natural plant community,” and in fact a natural plant community may be dependent on one or more of those disturbances. See discussion above under disclimax.

Dominance. “The collective size or bulk of the individuals of a group of organisms [especially a species] as it determines their relative influence on other components of the ecosystem.” A plant species that is highly dominant on a site affects other components of the ecosystem to a greater extent than do other species, and the highly dominant species is a better expression of the local climate and site potential. Therefore, the relative dominance of plant species is of paramount importance for assessing the ecological potentials and management responses of a site. The best measure of dominance is canopy cover by species.

Ecological Type. “A kind of land with a specific potential natural community and specific physical site characteristics, differing from other kinds of land in its ability to produce vegetation and to respond to management.”

Ecology. “The study of the interrelationships of organisms to one another and to their environment.” “The science which deals with the reciprocal relationships between organisms and their environment.” “Ecology is not to be regarded as a specialized field comparable to physiology or morphology or even zoology, botany, or geology, but as a point of view and a plan of attack.”

Ecosystem. A community of interacting organisms, considered together with the habitats and environments associated with the individuals and species of that community.

Ecotone. “Any zone of intergradation or interfingering, narrow or broad, between contiguous [map units].” “A junction zone or tension belt which may have considerable linear extent but is narrower than the adjoining [map units] themselves.”

Endoaquents. A soil class: wet Entisols of upland depressions where fresh sediments do not accumulate significantly. Formerly called "Haplaquents." See "Entisols."

Endoaquolls. A soil class: Mollisols that are naturally wet, with high-contrast mottles below a black epipedon. The black epipedon grades into a gray or grayish Cambic horizon. Formerly called "Haplaquolls."

Entisols. A soil class: "soils that have little or no evidence of development of horizons."

Eutroboralfs. A soil class: more or less freely drained Alfisols of cold places, that have a Frigid temperature regime. See "Alfisols" and "soil temperature regime."

Exotic. "Foreign, not native, introduced from another region. Opposed to indigenous." Notice that the area of consideration must be specified; the area from which the species came may be important to know in addition. Exotic species may be naturalized or not. Examples in this Region include *Elaeagnus angustifolia*, rainbow trout.

Fibric. A kind of organic soil material, very little decomposed; individual fibers are easily distinguished and separated.

Fluvaquents. A soil class: wet Entisols of flood plains and deltas, with several to many layers formed by the lateral action of water. See "Entisols."

Foothills Zone. A zone below the Montane Zone at the base of the Rocky Mountains. Sometimes called the Colline Belt.

Footslope. "The hillslope position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave...."

Fragmental. A soil horizon that is composed of "stones, cobbles, gravel, and coarse sand, with fines too few to fill interstices larger than 1 mm."

Frigid. "A soil temperature regime that has mean annual soil temperature of more than 0°C but less than 8°C, more than 5°C difference between mean summer and mean winter soil temperatures at 50 cm, and relatively warm summer temperatures."

Gley. A suspension of fine-textured organic matter, water, and clay. The organic matter and water are trapped inside the clay lattice structure, making a very slippery but impermeable substance.

Graminoid. An herbaceous plant of one of three families: Grass, Sedge or Rush. Grasses and grasslike plants.

Grass. Plants and species belonging to the grass family.

Grasslike Plants. Plants and species belonging to the sedge family and rush family. Some people also add selected species from other families, for example, cattails.

Gully. "A channel or miniature valley cut by concentrated runoff but through which water commonly flows only during heavy rains or during the melting of snow."

Habitat. The place where a plant or animal lives. The biotic or abiotic environment of a plant, animal, or community. The study of habitat largely comprises the field of synecology, along with the relationship of habitat to community and ecosystem. Some ecologists would use the term habitat as a synonym for what we call site; such use is discouraged as confusing a species' habitat with the area that it occupies. Habitat includes the concept of area covered by the species or population, but includes also much more, for example, structure and features contained within that area.

Haplargids. A soil class: Aridisols that have an illuvial horizon in which silicate clays have accumulated, and that have an Argillic horizon. See "Aridisols" and "illuvial."

Haploborolls. A soil class: Mollisols that are cool or cold, but not especially deep, and do not have an Argillic Horizon.

Haplustalfs. A soil class: relatively thin, reddish to brownish Alfisols of warm subhumid to semiarid regimes. See "Alfisols."

Haplustolls. A soil class: more or less freely drained Mollisols of middle to low latitudes and subhumid to semiarid climates, that have a Cambic horizon. See "Mollisols."

Hemic. A kind of organic soil material, intermediate in degree of decomposition between fibric and sapric.

Herbaceous Plant. A non-woody flowering plant, with no persistent woody stem above ground. Sometimes taken to include ferns and fern-allies as well.

Herbivore. “A plant-eating animal.”

Hillslope. “A part of a hill between its crest and the drainage line at the foot of the hill.”

Histic. A thin, organic surface horizon of a soil that is saturated with water at some period of the year.

Histosols. A soil class: “soils that are dominantly organic.”

Hydric Soil. “Soil that is wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants.”

Inceptisols. Soils “that [are] usually moist with pedogenic horizons of alteration of parent materials but not of illuviation. Generally, the direction of soil development is not yet evident from the marks left by various soil-forming processes or the marks are too weak to classify in another order.”

Increaser. “Plant species of the original vegetation that increase in relative amount, at least for a time, under overuse.”

Indicator Plant. “Any plant that, by its presence, its [abundance], frequency, or vigor, indicates any particular property of the site - particularly but by no means exclusively, of the soil.” The principle of plants as indicators is fundamental to community ecology, and the book written by Frederic Clements in 1920 on this subject is still the standard reference.

Indigenous. “Native, not introduced.” Also see native.

Krummholz. “The belt of discontinuous scrub or groveland at alpine timberlines, composed of species which have the genetic potential of the tree life form, but in this ecotonal belt are both strongly dwarfed and misshapen.” Wind, low effective soil temperatures, very short growing season, and very small soil pedons are some of the factors involved in formation of the Krummholz belt. Also see Alpine Zone.

Landform. Any recognizable physical form of the earth’s surface, having a characteristic shape, and produced by natural causes. Landform includes major forms such as plains, plateaus, and mountains, and minor forms such as hills, valleys, slopes, and moraines. Taken together, the landforms make up the surface configuration of the earth. “Landforms are the individual features seen; combinations of features are the landscapes.” See geomorphology, landscape, patch, matrix.

Layer. “A structural component of a community that may be recognized as consisting of plants of approximately uniform and distinctive stature.” Also called “vegetation layer” and “vegetation stratum.”

Lithic. Said of a soil that is relatively shallow to hard rock.

Litter. “Plant parts dropped on the soil surface so recently that the organ from which they originated can be discerned rather readily.” “The uppermost layer of organic debris” on the soil. Often combined in the same ground-cover category with duff, as litter and duff.

Loam. “Soil material that contains 7 to 27% clay, 28 to 50 % silt, and less than 52% sand.” See Soil Texture Triangle.

Meadow. A relatively moist site, relatively flat and in a bottom or toeslope position, dominated primarily by herbaceous plants or a few medium-height to low shrubs. Meadows are “associated with stream valleys that have poorly drained soils and subsurface water in summer;” leading plant species are Kentucky bluegrass, Baltic rush, and sedges. In the Gunnison Basin, there are no riparian areas dominated by herbaceous plants at potential below the upper Subalpine Zone. So, here these areas are depleted former willow or narrowleaf cottonwood riparian areas, that have been depleted by past cattle grazing and more recent elk browsing.

Mesic. Literally, “in the middle.” “Of sites or habitats characterized by intermediate moisture conditions, neither decidedly wet nor decidedly dry.” Ecologists and foresters generally use mesic as a moisture class, “intermediate [in] characteristic water relations.” However, soil scientists usually use mesic to refer to a [soil] temperature class. This should not be confusing, as long as the context is specified.

Midslope. See “backslope.”

Mollic. Dark and organic-rich soil.

Mollisols. A soil class: soils “with nearly black, organic-rich surface horizons and high supplies of bases. Soils that have decomposition and accumulation of relatively large amounts of organic matter in the presence of calcium. They have mollic epipedons and base saturation greater than 50% in any Cambic or Argillic horizon.”

Montane Zone. The lower forest zone, associated with forests of Douglas-fir and ponderosa pine, sometimes also including forests of blue spruce. To the south and west of the UGB, the Montane Zone can also include white fir. Usually forms a belt between the Colline Zone and the Subalpine Zone. Not every site within the Montane Zone is potentially a forest; neither will every forest be dominated by the trees named above.

Montmorillonite. See “Smectite.”

Montmorillonitic. See “Smectitic.”

Mottles. “Spots or blotches of different color or shades of color interspersed within the dominant matrix color in a soil layer; distinct mottles are readily seen and easily distinguished from the color of the matrix; prominent mottles are obvious and mottling is one of the outstanding features of the horizon.”

Native Species. “A species that was part of an area’s original fauna or flora.” The area in question must usually be specified, by country, state, physiographic division, ecoregion, county, or other area. A native species cannot be a weed, but may nonetheless be an invader in some places and under some management regimes. Examples of native species in UGB include fringed brome, greenback cutthroat trout, silky lupine, Tracy bluegrass, and elk.

Naturalized Species. A species that is not native, but has become part of the natural flora or fauna of an area, and is now capable of survival in the area without cultivation or other management. Many weeds have become naturalized species, but a naturalized species is not always an invader or a weed. The area in question must usually be specified. Examples in UGB include cheatgrass, rainbow trout, smooth brome, poison-hemlock, Kentucky bluegrass, crested wheatgrass and mountain goat.

Ochrepts. A soil class: cold, light-colored, brownish, more or less freely drained Inceptisols of high mountains or high latitudes. See “Inceptisols.”

Orthents. A soil class: Entisols on recent erosional surfaces. See “Entisols.”

Pachic. A soil with a Mollic epipedon more than 18 cm thick.

Pergelic. “A soil temperature regime that has mean annual soil temperatures of less than 0°C. Permafrost is present.” See “soil temperature regime.”

Plant Association. A kind of climax “plant community represented by stands occurring in places where environments are so closely similar that there is a high degree of floristic uniformity in all layers.” “A kind of climax plant community consisting of *stands* with essentially the same dominant species in corresponding layers.” The most significant climax plant community, analogous to the species level in species taxonomy. Plant association is a partially abstract concept, which may nonetheless exist in nature, useful for mapping and putting individual sites into potential classes. Plant association is a taxonomic unit, with a one-to-one relationship to its map unit, the habitat type. “Habitat is an essential part of the [plant] association, but it is undesirable, though often tempting, to name the association by its habitat. It is most important to fix our attention on the plant community itself, and to name it by its dominant species.”

Potential Natural Community. “One of usually several plant communities that may become established on [a site within] an ecological [type] under the present environmental conditions, either with or without interference by man.” Natural disturbances, such as drought, floods, wildlife, grazing by native fauna, insects, and disease, are inherent in the development of potential natural communities, which may include naturalized non-native species. For many sites, the potential natural community is the same as the climax community. PNC will differ from climax in those situations where the site has been so altered by disturbance or management that it is no longer capable of reaching climax.

Rainshadow. Also spelled rain shadow. “An area to the leeward of a high land mass, particularly a mountain range, which receives less rain than would be expected had not the high land mass been upwind of it.”

Residuum. “Unconsolidated, weathered, or partly weathered mineral material that accumulates by disintegration of bedrock in place.”

Riparian Ecosystem. A distinct, terrestrial ecosystem, often located spatially between an aquatic ecosystem and a drier ecosystem, characterized by distinctive riparian vegetation and soils requiring high water tables at some time in the growing season, and often occupying distinctive landforms as well. A riparian ecosystem can be distinguished from an aquatic ecosystem that sometimes might be adjacent to it, because the substrate for the riparian ecosystem is true soil.

Riparian Vegetation. “Vegetation growing on or near the banks of a stream or other body of water on soils that exhibit some wetness characteristics during some portion of the growing season.” It is generally not possible to distinguish riparian plant communities from non-riparian ones on the basis of present vegetation. But it is possible to distinguish riparian plant associations from non-riparian ones. Distinguishing and delineating riparian plant communities is much more successful than delineating riparian areas on the basis of individual plant species. “The [climax plant] community is a more reliable indicator than any single species of it.”

Sand. “A soil particle between 0.05 and 2.0 mm in diameter.”

Sapric. An organic soil material, the most highly decomposed, with the least amount of plant fiber and the lowest water content at saturation. Sapric material is a major constituent of most good loams.

Shoulder. “The hillslope position that forms the uppermost inclined surface near the top of a hillslope. If present, it comprises the transition zone from backslope to summit. The surface is dominantly convex in profile....” Sometimes called *upper slope*.

Shrub. “A perennial, woody plant that differs from a tree by its low growth [generally < 6 m] and the possession of several stems arising from the base.”

Silt. “A soil separate consisting of particles between 0.05 and 0.002 mm in equivalent diameter.”

Skeletal. “Soil with greater than 35% percent, by volume, of fragments larger than 2 mm.”

Smectite. “An aluminosilicate clay mineral with 2:1 expanding [properties]...Considerable expansion may be caused...By water moving between silica layers of contiguous units.”

Smectitic. Describing a soil or soil horizon in which “more than half by weight of the clay-sized fraction is composed of [Smectite], or a mixture with more [Smectite] than any other single clay mineral.”

Subalpine Zone. A forest zone, associated with closed forests, closely associated with forests of subalpine fir and Engelmann spruce. Not every site within the Subalpine Zone is potentially a forest ; neither will every forest be dominated by the trees named above.

Succession. “The progressive development of vegetation towards its highest ecological expression, the climax; replacement of one plant community by another.” The whole sequence of plant communities is called a sere. Secondary succession is usually more important to management than primary succession.

Summit. “The topographically highest hillslope position of a hillslope profile and exhibiting a nearly level surface....”

Swale. “A moist to wet, usually elongate area surrounded by higher ground and supporting predominantly woody vegetation.”

Terrestrial Ecosystem. An ecosystem with a true soil substrate. Producers are usually large green plants, and autotrophic consumers include insects, spiders, birds, and mammals. Heterotrophic consumers include soil arthropods, annelids, and nematodes. See aquatic ecosystem.

Terrestrial. Occupying land, as opposed to water. Said of plants, animals, and other organisms that spend all or much of their life cycles associated with areas with a true soil substrate. See aquatic.

Toeslope. "The hillslope position that forms the gently inclined surface at the base of a hillslope. Toeslopes in profile are commonly gentle and linear, and are constructional surfaces forming the lower part of a hillslope continuum that grades to valley...floors."

Tree. "A woody plant usually having one principal stem or trunk, with a definite crown of branches and leaves...It is believed that form and not size is the most widely accepted criterion, since size depends on environmental factors."

Ustochrepts. A soil class: cold, light-colored, reddish or brownish, more or less freely drained Inceptisols of subhumid to subarid regions of high mountains or high latitudes. See "Inceptisols."

Ustorthents. A soil class: Entisols on recent erosional surfaces, of middle or low latitudes that have an Ustic soil moisture regime."

Vegetative. Describing the parts of a plant other than the gametes and the organs protecting them. Vegetative reproduction describes modes of reproduction such as stolons and rhizomes. Notice that vegetative does not mean "of vegetation."

Xeric. "Said of a habitat characterized by a low or inadequate supply of moisture."