

FIREMON Glossary



The FIREMON Glossary includes terms that are used in the FIREMON protocol but that may be unfamiliar to some readers. The source of each definition is provided in parenthesis at the end of each definition (if applicable). In some cases, words will use the FIREMON documentation as a source. These terms were defined specifically for use in some part of FIREMON, and the definition given may or may not be applicable outside the FIREMON protocol. The term Burn Severity is an example. It was specifically defined for use in the Landscape Assessment methods.

1,000-hour fuel: Dead fuels consisting of roundwood 3.0 to 8.0 inches in diameter, estimated to reach 63 percent equilibrium moisture content in 1,000 hours (Fire Effects Guide).

100-hour fuel: Dead fuels consisting of roundwood in the size range from 1.0 to 3.0 inches in diameter, estimated to reach 63 percent of equilibrium in 100 hours (Fire Effects Guide).

10-hour fuel: Dead fuels consisting of roundwood 0.25 to 1.0 inch in diameter, estimated to reach 63 percent of equilibrium moisture in 10 hours (Fire Effects Guide).

1-hour fuel: Dead fuels consisting of dead herbaceous plant material and roundwood less than 0.25 inch in diameter, estimated to reach 63 percent of equilibrium moisture content in 1 hour or less (Fire Effects Guide).

Abiotic: Nonliving components of an ecosystem such as air, rocks, soil, water, and so forth. Compare to **biotic** (Wildland Planning Glossary, Glossary of Terms Used In Range Management).

Aerial plant component: The upper portion of a plant including branches, leaves, and flowering parts. Compare to **basal vegetation**.

Alluvium: A general term for all detrital material deposited or in transit by streams, including gravel, sand, silt, clay, and all variations and mixtures of these (Glossary of Landscape and Vegetation Ecology for Alaska).

Alpine: That vegetation occurring between the upper limit of trees (timberline) and the lower limit of snow (snowline) on mountains high enough to possess both of these features (Glossary of Landscape and Vegetation Ecology for Alaska).

Ash: The incombustible matter remaining after a substance has burned (Dictionary of Scientific and Technical Terms).

Aspect: A position facing or commanding a given direction; exposure. Aspect is the compass direction of the prevailing slope with respect to true north (FSVeg).

Azimuth: A horizontal angular measure from true north to an object of interest (FSVeg).

Basal area: The area of ground surface covered by the stem or stems of a plant; for trees, measured at 4.5 ft above the ground; for forbs and grasses, measured at the root crown (FSVeg).

Basal vegetation: In FIREMON, the area of the cross-section of the plant stem where it enters the ground surface; often expressed as a percent of the plot cover. Compare to **aerial plant component** (FIREMON).

Baseline: A permanent line from which all vegetation transects are oriented. Usually, used with the FIREMON CF, PO, LI, DE, and RS sampling methods (FIREMON).

Belt transect: A two-dimensional transect with width and length. Compare to **transect** and **quadrat**.

- Biophysical setting:** Describes the physical environment of the FIREMON plot relative to the organisms that grow there. The site characteristics included in a description are topography, geology, soils, and landform (FIREMON).
- Biotic:** Applied to the living components of the biosphere or of an ecosystem, as distinct from the abiotic physical and chemical components. Compare to Abiotic (The Concise Oxford Dictionary of Ecology).
- Biotic plant community:** Any assemblage of populations (plants) living in a prescribed area or physical habitat; an aggregate of organisms that form a distinct ecological unit (Wildland Planning Glossary).
- Bole char height:** A fire severity measurement that is used to quantify potential tree mortality. In FIREMON, it is height of the top of continuous char measured above the ground on the downhill side of the tree, or if on flat ground the top of the lowest point of continuous char (FIREMON).
- Breaklands:** The steep to very broken land at the border of an upland summit that is dissected by ravines (Landforms for Soil Surveys in the Northern Rockies).
- Breakpoint diameter:** In FIREMON the tree diameter above which all trees are tagged and measured individually and below which trees are tallied to species-diameter or species-height classes. Selection of the breakpoint diameter must account for fire monitoring objectives along with sampling limitations and efficiency (FIREMON).
- Broadleaf species:** Deciduous and evergreen trees and shrubs that have seeds within a closed pod or ovary. Compare to **conifer species** (Glossary of Landscape and Vegetation Ecology for Alaska, Webster's New World Dictionary).
- Burn severity:** The degree of environmental change caused by fire, or the result, is the cumulative effect of fire on ecological communities comprising the landscape; the physical and chemical changes to the soil, conversion of vegetation and fuels to inorganic carbon, and structural transformations that bring new microclimates and species assemblages. An analogy to burn severity would be storm severity, which refers to the damage or outcome left in the wake of the storm. Compare to **fire severity** (FIREMON Landscape Assessment Sampling Methods).
- Caliper:** An instrument for determining tree and log diameters by measurement of their rectangular projection on a straight graduated rule via two arms at right angles (and one of them sliding along the rule itself) (Timber Cruising in the Pacific Northwest).
- Canopy cover:** The percentage of ground covered by the vertical projection of the foliage of plant parts. Small openings within the canopy are included. Some sources differentiate canopy cover (with the spaces and small openings included) and foliar cover (with the spaces and small openings excluded). In FIREMON we suggest sampling foliar cover rather than canopy cover. Compare to **foliar cover** (Glossary of Terms Used in Range Management, National Range and Pasture Handbook).
- Canopy fuel base height:** In FIREMON, a subjective assessment of the lowest live or dead fuels attached to the stem of a tree that are sufficient to move fire to the burnable material above. Used to assess crown fire potential (FIREMON).
- Casket tag:** Tags made of high-grade steel that will not melt in a prescribed burn or wildfire. .
- CBI (Composite Burn Index):** This method uses a field sampling approach on a relatively large plot to determine severity ratings for individual strata, and a synoptic rating for a whole plot area (FIREMON Landscape Assessment Sampling Methods).
- CC (crew costs):** The cost of outfitting one sampling crew including transportation, supplies, and salary (FIREMON).
- CF (cover frequency):** Methods used to assess changes in plant species cover and frequency for a macroplot. These methods use quadrats to sample within-plot variation and quantify statistically valid changes in plant species cover, height, and frequency over time. This method is primarily suited for grasses, forbs, and shrubs less than 3 ft in height (FIREMON).
- Char:** The blackened charcoal left from incomplete combustion of organic matter.
- Clay:** Fine-grained material that develops plasticity when mixed with a limited amount of water; composed primarily of silica, alumina, and water, often with iron, alkalis, and alkaline earths. As a soil textural class, soil that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt (Dictionary of Scientific and Technical Terms, Glossary of Landscape and Vegetation Ecology for Alaska).

- Clinometer:** An instrument for measuring angles of slope or inclination (Webster's New World Dictionary).
- Cluster sampling:** A method of locating plots in which a group of polygons are sampled in a cluster around an easily accessible point rather than polygons sampled throughout the landscape (FIREMON).
- Conifer species:** A plant belonging to the class Pinatae of cone-bearing gymnospermous trees and shrubs, mostly evergreen, including the pine, spruce, fir, cedar, yew, and cypress. Generally needle-leaved, cone-bearing plants having naked seeds not enclosed in an ovary. Compare to **broadleaf species** (Glossary of Landscape and Vegetation Ecology for Alaska, Webster's New World Dictionary).
- Cover:** See **canopy cover**, **crown cover**, and **foliar cover**.
- Crown biomass:** The total quantity (weight) of a tree crown including live and dead branches and foliage.
- Crown class:** A code used to describe the position in the canopy of the tree relative to the trees around it and to describe how much light is available to that tree. FIREMON has six categories describing crown class: 1) Open Crown, 2) Emergent, 3) Dominant, 4) Codominant, 5) Intermediate, and 6) Suppressed (based on The Practice of Silviculture).
- Crown cover:** An estimate of tree cover on a plot. Generally, it includes the small openings and spaces in the crown. Sometimes called canopy closure. In FIREMON we suggest sampling foliar cover rather than crown cover; however, project objectives may suggest using crown cover. If crown cover data is collected be sure to note in the Metadata table the fields where it was applied (Forest Measurements).
- Cryptogam:** A plant that reproduces by spores or gametes rather than seeds (an alga, bryophyte, or pteridophyte) (The Concise Oxford Dictionary of Ecology).
- Cryptogamic crust:** Cryptogams such as mosses, algae, lichens, or liverworts growing in a thin crust (The Concise Oxford Dictionary of Ecology).
- Culm groups:** Stalks or stems in grasses (Webster's New World Dictionary).
- CWD (coarse woody debris):** Generally, pieces greater than 3 inches (10 cm) in diameter, at the point where the piece crosses through the imaginary sampling plane, and longer than 6 ft (2 m). However, definitions vary widely. Dead and down woody debris larger than 3 inches in diameter is often called 1,000-hour (and greater) fuel (Ecology of Coarse Woody Debris in Temperate Ecosystems, FIREMON).
- Damage description:** A code that refers to biotic (insects, disease, or browsing) or abiotic (wind, snow, or fire), damage in trees. This code describes the damaging agent. Compare to **severity description** (FIREMON).
- DBH (diameter at breast height):** A measure of a tree taken at breast height (4.5 ft), outside the bark of the tree bole, perpendicular to the bole from the uphill side of the tree (FSVeg).
- DE (density):** A FIREMON method used to assess changes in plant species density and height for a macroplot. This method uses quadrats and belt transects to sample within-stand variation and quantifies statistically valid changes in plant species density and height over time (FIREMON).
- Decay class:** A method used in FIREMON to determine the degree of decay present in coarse woody debris. Compare **snag class** (Ecology of coarse woody debris in temperate ecosystems).
- Deciduous:** Plants that shed their leaves annually; as opposed to evergreens (Webster's New World Dictionary).
- Declination:** The angle between the magnetic and geographical meridians, expressed in degrees and minutes east or west to indicate the direction of magnetic north from true north; also known as magnetic declination; variation (Dictionary of Scientific and Technical Terms).
- DEM (Digital Elevation Model):** United States Geologic Survey geographic elevation data distributed in raster form. A digital representation of the shape of Earth's surface. Typically digital elevation data consists of arrays of values that represent topographic elevations measured at equal intervals on Earth's surface (FSVeg).
- Diameter tape:** A spring-wound tape measure that has one side in linear units that are converted to diameter and the other side in units for measuring feet and inches. Also called a D-tape or loggers tape (Measurements for Terrestrial Vegetation).
- Dot tally:** A method that uses a series of dots, lines, and boxes to tabulate numbers when sampling. This method is particularly useful when counting many small items.
- Duff:** The partially decomposed organic material of the forest floor that lies beneath the freshly fallen needles, twigs, and leaves, and above the mineral soil. This is the fermentation and humus layer where the vegetative material is broken down, and the individual pieces are no longer identifiable (FSVeg, Fire Effects Guide).

- Duff/litter profile:** The cross-sectional view of the litter and duff layers. It extends vertically from the top of the mineral soil to the top of the litter layer (FIREMON).
- DWD (dead and down woody debris):** Dead woody pieces of trees and shrubs that have been broken, uprooted, or severed from their root system, not self-supporting, and are lying on the ground (no longer supporting growth). DWD are categorized in size classes of 1-hour, 10-hour, 100-hour, and 1,000-hour (and greater) (FSVeg).
- ECODATA:** Land planning inventory package including sampling methods, field forms, database software, and analysis software. Many FIREMON sampling methods are based on the ECODATA protocols.
- Ecotone:** The area influenced by the transition between plant communities or between successional stages or vegetative conditions within a plant community (Fire Effects Guide).
- Epicormic branching:** A branch that arises from latent, adventitious, or dormant buds within the bark of the tree. Epicormic branch development is often initiated by crown damage such as breakage or fire injury (The Practice of Silviculture).
- FARSITE (Fire Area Simulator):** A fire growth model that uses fuels, topography, and weather to predict fire spread.
- Fern:** A nonflowering embryophyte having roots, stems, and fronds, and reproducing by spores instead of by seeds (Webster's New World Dictionary).
- Fire behavior:** The manner in which a fire burns in response to the variables of fuel, weather, and topography. A fire may be described as hot or cool, running or creeping, flaming or smoldering, or perhaps, torching or crowning. Compare to **fire effects** (Fire Effects Guide, Glossary of Wildland Fire Management Terms Used in the U.S.).
- Fire Behavior Fuel Model:** Mathematical descriptions of fuel properties (for example, fuel load and fuel depth) that are used in conjunction with environmental conditions to predict certain aspects of fire behavior (FSVeg, Introduction to Wildland Fire Behavior Calculations-Glossary).
- Fire effects:** Any consequence neutral, detrimental, or beneficial resulting from fire. Examples of first order fire effects are tree mortality, emissions, and fuel consumption. Examples of second order fire effects are trees damaged by fire that later succumb to insect infestations, sedimentation in streams from eroding soils, and plant succession. Compare to **fire behavior** (Glossary of Landscape and Vegetation Ecology for Alaska).
- Fire severity:** A qualitative indicator of the effect of fire on the ecosystem, whether it affects the forest floor, canopy, or some other part of the system. It is sometimes assessed based on postfire attributes such as char height or crown scorch. Compare to **burn severity** (Glossary of Landscape and Vegetation Ecology for Alaska, FIREMON).
- FL (fuel load):** Methods used to sample dead and down woody debris, depth of the duff/litter profile, estimate the proportion of litter in the profile, and estimate total vegetative cover and dead vegetative cover. Down woody debris is sampled using the planar intercept technique (Handbook for Inventorying Downed Woody Material, FIREMON).
- Flame height:** The average height of flames as measured on a vertical axis. It may be less than flame length if flames are angled. Compare to **flame length** (Introduction To Wildland Fire Behavior Calculations-Glossary).
- Flame length:** The distance measured from the tip of the flame to the middle of the flaming zone at base of the fire. It is measured on a slant when the flames are tilted due to effects of wind and slope. Compare to **flame height** (Glossary, Wildland Fire Behavior Calculations).
- FOFEM (First Order Fire Effects Model):** Model for predicting tree mortality, fuel consumption, emissions, and soil heating from preburn calculations (FOFEM ver. 4.0).
- Foliar cover:** The vertical projection of shoots (stems and leaves). The percentage of ground covered by the vertical projection of the aerial portion of the plants (foliage and supporting parts). Small openings in the canopy and intraspecific overlap are excluded. This is the cover assessment recommended in FIREMON (Glossary of Terms Used in Range Management, FIREMON).
- Forb:** A plant with a soft, rather than permanent woody stem, that is not a grass or grasslike plant. Compare to **graminoid** (Fire Effects Guide).
- FWD (fine woody debris):** Dead woody debris less than 3 inches in diameter, including 1-hour, 10-hour, and 100-hour fuels (FIREMON).

GIS (geographic information system): Integrated software, hardware, and data to store and manipulate information that combines thematic and locational attributes about geographic features (FIREMON Landscape Assessment Sampling Methods).

Go/no-go gauge: A tool used to classify fuels into one of three classes: 1-hour, 10-hour, and 100-hour (Handbook for Inventorying Down Woody Debris).

GPS (Geographic Positioning System): A network of radio-emitting satellites from which your position can be triangulated in three dimensions (north, east, and elevation) to within 3 to 50 m of accuracy (FSVeg, FIREMON).

Graminoid: Grasslike plants, including grasses, sedges, rushes, reeds, and cattails (Fire Effects Guide).

Grid frame: Used with the PO method a grid frame is a frame of any shape or size where crosshairs formed by perpendicularly oriented strings are considered sampling points. Interceptions of crosshairs with plant parts are considered hits (FIREMON).

Ground cover: This includes cover of basal vegetation, moss/lichens, litter, rocks, gravel, and so forth, on a site (FIREMON).

Herb: A small, nonwoody, seed-bearing plant in which aerial parts die back at the end of each growing season. Compare to **shrub** (The Concise Oxford Dictionary of Ecology).

Igneous: Rocks that crystallized from molten magma, such as basalt, andesite, diorite to gabbro, latite, quartz monzonite, trachyte and syenite, rhyolite, granite, welded tuff (tufa), and scoria (porcellanite) (Roadside Geology of Montana, FIREMON).

Increment borer: An instrument used to bore into the pith of the tree and extract a core that can be used for determining age and growth rate by counting the rings in the extracted core (Forest Measurements).

LA (land assessment): A method that identifies and quantifies fire effects over large areas, at times involving many burns, by using satellite derived Normalized Burn Ratio (NBR) together with a ground-based indicator of fire severity, Composite Burn Index (CBI) (FIREMON).

Ladder fuel: Fuels that provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees and shrubs with relative ease (Glossary of Wildland Fire Management Terms Used in the U.S.).

Landsat: A satellite that carries a Thematic Mapper sensor that records 30-m data in specific spectral bands, and 60-m data in one band. The bands measure reflected energy and heat (FIREMON Landscape Assessment Sampling Methods).

Landscape: All of the natural features, such as hills, forest, and water that distinguish one part of Earth's surface from another. A landscape can be any size and shape but it spatially defines stands. Compare to **stand** (Glossary of Landscape and Vegetation Ecology For Alaska, FIREMON).

Layered canopy structure: The vertical structural components of a community consisting of plants of approximately the same stature or height. For example, tree layer, shrub layer, herb layer, cryptogam layer. Compare **strata**, **vertical** (Glossary of Landscape and Vegetation Ecology for Alaska).

LCP (live crown percent): The percent of the total length of tree bole that is supporting live crown. This is assessed from the highest live foliage to the lowest live foliage or the base of the crown. Estimated by visually redistributing the live tree crown evenly around the tree so the branches are spaced at the same branch density as seen along the bole and form the typical conical crown (FIREMON).

LI (line intercept): The FIREMON line intercept method is used to assess changes in plant species cover for a macroplot. This method uses line transects to sample plot variation and quantify statistically valid changes in plant species cover and height over time. This method is especially useful for quantification of shrub cover greater than 3 ft tall. Canopy cover is recorded as the number of inches intercepted along a transect. Percent canopy cover is calculated by dividing the number of inches intercepted by each item by the total length of the transect. Compare to **planar intercept** (FIREMON).

Lichen: A nonvascular small plant composed of a particular fungus and a particular alga growing in an intimate symbiotic association and forming a dual plant, commonly adhering in colored patches to rock, wood, and soil (Webster's New World Dictionary).

Litter: The top layer of the forest floor composed of loose debris such as branches, twigs, and recently fallen needles and leaves; little altered by decomposition and still identifiable. This layer may also include debris from shrubs, grasses, and forbs that have recently died. The litter layer is directly above the duff layer (Fire Effects Guide, FIREMON).

Live canopy base height: In a stand, an estimate of the typical or common height of the lowest live branch having live foliage (FIREMON).

Live crown base height: For individual trees, the height of the lowest live branch whorl with live branches in two quadrants exclusive of epicormic branching and of whorls not continuous with the main crown (USFS Region One, Common Stand Exam Guide).

Loam: Soil mixture of sand, silt, clay, and humus (Dictionary of Scientific and Technical Terms).

Loggers tape: A spring-wound tape measure that has one side in linear units that are converted to diameter and the other side in units for measuring feet and inches. Also, called a diameter tape or D-tape (Measurements for Terrestrial Vegetation).

Macroplot: A term defining the greater sampling area in which all other sampling methods are nested. The size and shape of the macroplot is determined by sampling objective and available resources, but most macroplots are rectangular or circular encompassing about 0.04-0.1 ha (FIREMON).

Mature tree: In FIREMON a tree greater than breakpoint diameter. This class includes SAF (Society of American Foresters) standard pole trees, medium trees, large trees, and very large trees (FIREMON).

Mean height: In FIREMON, an estimate of the average height in meters for all individuals of a species or a species by size/age class; estimated by visualizing a plastic sheet draped over the vegetation in the class and recording the average height of the sheet above ground (FIREMON).

Metadata: Data about the data. In data processing, metadata are definitional data that provide information about documentation of the data managed within an application environment. Metadata may include descriptive information about the context, quality, condition, or characteristics of the data. In FIREMON this includes, among other things, specific details regarding the sampling design, approach, and particulars describing the application of methods (www.dictionary.com).

Metamorphic: Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat and pressure. Nearly all such rocks are crystalline such as argillite, siltite, quartzite, slate, phyllite, schist, and gneiss (Glossary of Landscape and Vegetation Ecology for Alaska).

Meter stick: A metric measuring stick that is 1 m, equal to 39.37 inches.

Microplot: A sampling area that is smaller than the macroplot used for measuring small scale phenomenon, such as ground cover or individual plant or species attributes. Often square and about 1 m² in size. Microplots are usually located in a grid pattern nested within the macroplot. Compare **quadrat** and **subplot** (FIREMON).

Mineral soil: Soil composed principally of mineral matter, the characteristics of which are determined more by the mineral than the organic content. This soil is often gravelly or sandy and lighter than the duff layer (The Concise Oxford Dictionary of Ecology).

Mode/modal: The value that occurs most often in a frequency distribution (Measurements for Terrestrial Vegetation).

Moss: A nonvascular small, green bryophyte growing in velvety clusters on rocks, trees, and moist ground (Webster's New World Dictionary).

NBR (normalized burn ratio): A methodology involving remote sensing; this uses Landsat 30-m data and a derived radiometric value. The normalized burn ratio is temporally differenced between pre- and postfire datasets to determine the extent and degree of detected change from burning (FIREMON Landscape Assessment Sampling Methods).

NEXUS: Algorithm package for predicting fire behavior for assessing crown fire hazard (Nexus).

Nonvascular plants: Plants without an internal vascular system (xylem and phloem) for the transport of nutrients, such as mosses and lichens (Webster's New World Dictionary).

NRCS plant database: The Natural Resources and Conservation Service supported plants database. It is used in FIREMON for consistent naming and coding of plant species (<http://plants.usda.gov/>).

- NRF (nested root frequency):** Used when sampling plant frequency. NRF balances plant density and size by assigning frequency values based on the plant's presence in a nested set of plots corresponding to, usually, 1, 25, 50, and 100 percent of the quadrat.
- NRP (number of required plots):** This is the number of plots required per stand per stratification category needed to meet different statistical objectives (FIREMON).
- PCS (percent crown scorched):** A fire severity measurement that relates directly to tree mortality; an estimate of the amount of crown volume that was consumed or damaged by fire (FIREMON).
- PD (plot description):** Methods used to describe general characteristics of the FIREMON macroplot to provide ecological context for data analyses. The PD data characterize the topographical setting, geographic reference point, general plant composition and cover, ground cover, fuels, and soils information. The PD method contains the only required fields in FIREMON (FIREMON).
- Peak canopy cover:** A method in FIREMON for estimating cover at peak phenological development of a plant. For example, if leaves have fallen off the plant and are on the ground, the projected cover has been mentally reconstructed with leaves on the plant (FIREMON).
- PF (project funds):** The amount of money available to conduct the entire monitoring project (FIREMON).
- Phenological stage:** A specific phase within the cycle (usually annual) of a plant's leafing, flowering, fruiting, and so forth (The Concise Oxford Dictionary of Ecology).
- Pixel:** Literally, "picture element"; the smallest area for which data values are assigned. Pixels generally are all the same size and arranged in a contiguous rectangular grid of rows and columns. Spatial orientation of the grid can be registered to a map projection, so that individual pixels may be located on the ground (FIREMON Landscape Assessment Sampling Methods).
- Plain:** An extensive, level, and usually treeless area of land (www.dictionary.com).
- Planar-intercept:** For sampling down woody debris in FIREMON, it is a method in which the sampling area is an imaginary plane extending from the ground, vertically from horizontal (not perpendicular to the slope) to a height of 6 ft above the ground. Pieces of DWD (down woody debris) that intercept the sampling plane are measured and recorded. Frequently the term "line transect sampling" is used when discussing the planar intercept method. Compare to **line intercept** (FIREMON).
- Plot:** The basic sampling unit. This is an area of ground where FIREMON methods will be implemented. The plot is spatially defined by the macroplot (FIREMON).
- PO (point cover):** This method is used to estimate vegetation and/or ground cover for a macroplot. Point estimates of cover are collected at fixed locations along randomly located line transects. Individual pins, pin frames, or point grids are placed at systematic intervals along a transect. Pins are lowered, and plant species and/or ground cover categories are recorded as the number of "hits" encountered along a transect. Cover is calculated by dividing the number of "hits" by the total number of points along a transect (FIREMON).
- Point frame:** Used with the PO method, a point frame is a wooden or metallic frame with two legs and two cross arms typically containing 10 pins. Steel rods or wire pins are lowered through the holes (FIREMON).
- Polygon:** Generally a discrete area defined by vectors or pixels electronically mapped in a Geographical Information System (GIS). In FIREMON polygons define areas with similar stratification attributes. A polygon can define a stand if the polygon boundaries are based on differences in vegetation characteristics (FIREMON).
- Potential lifeform:** A code that describes the community lifeform that would eventually inhabit the FIREMON plot in the absence of disturbance (FIREMON).
- PPR (plots per day):** The number of plots that can be sampled by one crew; if unknown, estimate the rate of four plots per day (FIREMON).
- Prism (wedge prism):** A tapered wedge of glass that bends or deflects light rays at a specific offset angle. When a tree stem is viewed through such a wedge, the bole appears to be displaced. All tree stems not completely offset when viewed through the wedge are counted. Trees that appear borderline should be measured and checked with the appropriate plot radius factor (Forest Measurements).
- Quadrat:** A small clearly demarcated plot or sample area of known size on which ecological observations are made. Quadrats may be square, rectangular, or circular, and are usually no more than 1 m². Compare **microplot** and **subplot** (Glossary of Landscape and Vegetation Ecology for Alaska).

Raster: A digital image stored in one of many grid cell formats, where the cells (that is, pixels) are represented as binary numeric values referenced by byte position within the file. Byte position can be translated into pixel row and column, such that the grid models some two-dimensional space (FIREMON Landscape Assessment Sampling Methods) .

Relevé approach: A sampling method in which one plot is placed in a representative portion of a stand “without preconceived bias.” The assumption in relevé sampling is that the plot is representative of a larger area (such as a stand or polygon), and therefore, conditions measured at the plot can be used to describe the stand or polygon as a whole (Measurements for Terrestrial Vegetation, FIREMON).

Rhizomatous plants: A plant that has a stem, generally modified, that grows below the surface of the ground and produces roots, scale leaves, and suckers irregularly along its length (Glossary of Landscape and Vegetation Ecology for Alaska).

Riparian: 1) Pertaining to streamside environment. 2) Vegetation growing in proximity to a watercourse, lake, or spring and often dependent on its roots reaching the water table (Glossary of Landscape and Vegetation Ecology for Alaska).

RS (rare species): This FIREMON method is used specifically for monitoring rare plants such as threatened and endangered species. Plants are located using measurement along and perpendicular to the sampling baseline.

SA (sample area): The established area used for sampling. This can be all of the stands on a selected landscape or targeted stands. For example, monitoring plots may only be needed on steep areas where rehabilitation efforts were prevalent, or it may be only forested areas that need to be sampled to monitor tree establishment after wildfire.

Sampling plane: Used in the FIREMON FL sampling. The imaginary plane is defined by a measuring tape laid on or near the ground and extends from the top of the litter layer, duff layer, or mineral soil—whichever is the highest layer—to a height of 6 ft (Handbook for Inventorying Downed Woody Material, FIREMON).

Sapling: A tree greater than 4.5 ft and less than the established breakpoint diameter (FIREMON).

SC (species composition): This is a method used to provide ocular estimates of canopy cover and height for plant species on a macroplot. The SC sampling methods are suited for a wide variety of vegetation types and are especially useful in communities of tall shrubs or trees (FIREMON).

Sedimentary: Rocks made up of particles deposited from suspension in water. The main kinds of sedimentary rock are limestone, dolomite, sandstone, siltstone, shale, and conglomerate (Glossary of Landscape and Vegetation Ecology for Alaska).

Seedling: A tree less than 4.5 ft tall (FIREMON).

Severity description: A code used to quantify the degree of damage by biotic (insects, disease, browsing) and abiotic (wind, snow, fire) agents. Compare to **damage severity** (FIREMON) .

Shrub: A woody plant that branches below or near ground level into several main stems, so has no clear trunk. It may be deciduous or evergreen. At the end of each growing season there is no die-back of the axes. Compare to **herb** (The Concise Oxford Dictionary of Ecology).

Silt: As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 mm) to the lower limit of very fine sand (0.05 mm). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay (Glossary of Landscape and Vegetation Ecology for Alaska).

Slope: Defined in FIREMON as the inclination of the land surface, measured in degrees, from the horizontal (Glossary of Landscape and Vegetation Ecology for Alaska, FIREMON).

Slope shape: Slopes may be characterized as uniform (linear or planar), concave, convex, undulating, flat, or patterned (FSVEG).

Snag class: A code used to describe the condition of a dead tree. Compare to **decay class** (FSVeg).

Soil colloid: Soil substance of very small particle size, mineral or organic (The Concise Oxford Dictionary of Ecology).

SP (sampling potential): In general, sampling potential describes the number of standard plots that can be installed during the sampling effort. This statistic integrates most sampling resources into one index that describes the capacity to perform the monitoring project. The sampling potential (SP-number plots) is the project funds (PF-dollars) divided by crew costs (CC-dollars per day) multiplied by plot production rate (PPR-plots per day) (FIREMON).

Spread Rate: Relative activity of a fire in extending its horizontal dimensions, expressed as rate of increase of the perimeter, rate of increase in area, or rate of advance of its head, depending on the intended use of the information; generally in chains or acres per hour (Glossary of Wildland Fire Management Terms Used in the U.S.).

SRF (stand replacing fire): Fire that kills all or most living overstory trees in a forest and initiates secondary succession or regrowth (Glossary of Wildland Fire Management Terms Used in the U.S.).

Stand: A spatially continuous group of trees and associated vegetation having similar vertical and spatial structure and species composition (examples are: pole, seedling, sapling, mature) usually growing under similar soil and climatic conditions. Compare to Strata, horizontal (FSVeg).

Stand height: The estimate of the height of the highest stratum that contains at least 10 percent crown cover measured across a stand (FIREMON).

Statistical approach: A method using random sampling, which is utilized in most natural resource inventories. The emphasis is on gaining a statistically sound estimate of variation and mean that can be used to make inference (FIREMON).

Status: In FIREMON this is a classification for the general health of a plant. There are four tree status codes: 1) Healthy, 2) Unhealthy, 3) Sick, and 4) Dead (FIREMON).

Strata, horizontal: In FIREMON these are areas with similar stratification attributes. Compare **polygon** (FIREMON).

Strata, vertical: Referring to one or more layers of a community, arranged vertically and having a continuous sequential order from below ground to ground level, and from ground level to the uppermost vegetative canopy. Strata typically are based on within-stratum similarities of physical organization, species composition, and/or microclimate (FIREMON Landscape Assessment Sampling Methods).

Stratification factor: Biotic or abiotic attribute such as fuel load, tree density, or treatment type used to stratify or divide a landscape into like polygons or strata (FIREMON).

Stratified random sample: Method of locating plots within a stratum used with the statistical approach to establish plots randomly across the landscape stands or based on some land type stratification factor; using any technique that distributes plots so that probability of all possible plot locations is equal (FIREMON).

Stratified systematic sample: Method of locating plots within a stratum used with the statistical approach. Establishes the first plot randomly where the probability of all possible locations are equal. Then all other macroplots are located with reference to the first, usually along a grid or network of, usually, equal spacing (FIREMON).

Structural characteristics: In FIREMON the five important tree characteristics are: DBH, height, live crown length, crown fuel base height, and crown class. These characteristics are used to compute properties such as crown biomass, vertical ladder fuels, and potential fire-caused mortality (FIREMON).

Structural stage: Describes a stand in terms of the primary elements of vegetation structure, which are growth form, vertical structure, and coverage (Glossary of Landscape and Vegetation for Alaska).

Subplot: A subplot is a microplot nested inside the macroplot for the purpose of measuring numerous individuals or other attributes that would be difficult to assess over the entire macroplot. In FIREMON, generally associated with the TD method. Compare **quadrat** and **microplot** (FIREMON).

Surficial geology: The description of the rock type on the surface of Earth.

TD (tree data): Methods used to sample individual trees in a fixed-area plot to estimate tree density, size, and age class distributions before and after fire so that tree survival and mortality rates can be assessed. This method allows the measurement of diameter, height, age, growth rate, crown length, pathogen evidence, fire severity, and snag description for each tree above a user-specified diameter (FIREMON).

Topography: The configuration of Earth's surface, including its relief and the position of its natural and artificial features (Introduction to Wildland Fire Behavior Calculations-Glossary).

Transect: A theoretically nondimensional line that is located within the macroplot. Ecological attributes that intersect or cross the transect are tallied or measured. Compare to **belt transect** (FIREMON).

Treatment: Procedures applied on the landscape or stand level where the effects can be compared to other applied procedures. Examples include a fall burned prescribed fire, an unburned 'control,' or an area burned with a specific ignition method or pattern, or a harvested and burned area (Fire Effects Guide).

UTM (Universal Transverse Mercator): A two-dimensional (flat-map) projection widely used in natural resource applications, suitable for maps of 1:100,000 and greater scale. Each hemisphere of the world is divided into 60, 6-degree, zones by longitude. Within each zone, the reference is an X, Y equidistant grid in meters, with origin at the lower left zone corner (western most point on the equator). Coordinate pairs are given in meters northing and easting (example: 5437689N, 278334E), increasing from the origin to the north and to the east, respectively (FIREMON Landscape Assessment Sampling Methods).

Vascular plants: A plant having specialized tissues (xylem and phloem) that conduct water and synthesized foods, such as a fern or seed plant (Webster's New World Dictionary).

Vector: Geographic data represented as numeric X, Y coordinates, and usually some attribute identifier. Vector data define features by point, line, or polygon topology, and are displayed as such on maps or graphics (FIREMON Landscape Assessment Sampling Methods).

WD (work days): The number of 8-hour work days available to finish the monitoring project (FIREMON).

Whorl: An arrangement of three or more leaves, petals, or organs radiating from a single node (www.dictionary.com).