

Glossary for Eddy LSR Project (*Glossary 1: Fire and Fuels*)

Bole—The main stem of a conifer tree, which becomes a log or logs when the tree is cut.

Burning Period—That part of each 24-hour period when fires spread most rapidly, typically from 10:00 AM to sundown.

Canopy Base Height—For a single tree, it is the height from an imaginary line drawn across the trunk at ground level to the bottom of the obvious lowest live foliage. Stated also as the height above the ground of the first canopy layer where the density of the crown mass within the layer is high enough to support vertical movement of a fire.

Canopy Cover—The ground area covered by tree crowns, or the degree to which the canopy (forest layers above one's head) blocks sunlight or obscures the sky, expressed as a percent of ground area; also referred to as canopy cover or crown cover.

Crown (Canopy)—The branches and foliage of trees; does not include stems and boles.

Crown (or Canopy) Bulk Density—The weight of the canopy per unit volume. A mathematical model taken from cruise/forest inventory data using these measurements: tree diameters at chest height, tree height, ratio of crown height to tree height, and crown width. Species factors are also used, newer inventory methods that just use species, basal area, and stand density.

Crown Fire—A fire that advances through the canopy of a forest, either as a passive, active, or independent crown fire. Effective strategies for reducing crown fire occurrence and severity are to (1) reduce surface fuels, (2) increase height to live crown, (3) reduce canopy bulk density, and (4) reduce continuity or density of the forest canopy

Crown Fuel—Expressed as canopy cover or crown bulk density includes living and dead foliage.

Fine Fuels—Fuels that ignite readily and are consumed rapidly by fire (for example, cured grass, fallen leaves, needles, small twigs less than 1/4 inch in diameter).

Fire Behavior—Flame length, fire type, tree mortality, fuel loading, and canopy base height are all measures used in understanding fire behavior for current conditions and for evaluating pre- and post-treatment conditions.

Fire Brand—Burning material, such as foliage, that is carried by the wind. The chance that fire brands will ignite fuels where they land is expressed as Probability of Ignition.

Fire Frequency—The average number of years between fires.

Fire Regime—The kind of fire activity (frequency and intensity) that characterizes a specific region.

Fire Severity—A qualitative term used to describe the relative effect of fire on an ecosystem, especially the degree of organic matter consumption and soil heating. Thus, fires are commonly classed as low, moderate, and high severity. Fire severity may or may not be closely related to fireline intensity.

Fire Type—Fire type is described in four ways. The first type is a surface fire, which burns only the fuels at or near the surface without torching the trees above—this is the desired condition. The second type is the passive crown fire, which torches out individual or small groups of trees as the surface fuels burning under them provide the convective heat to ignite the above-ground fuels. The third is the active crown fire in which fire is spread from tree to tree in conjunction with the convective heat of the surface fuels burning under them. The fourth is the Independent or running crown fire—this is a very rare occurrence in which the fire is spread from tree to tree independent of the burning surface fuels. This type of crown fire requires extreme weather conditions and contiguous heavy tree canopy.

Flame Length—The length of flame measured in feet—it is measured from the base of the flame to the tip of the flame. It is an indicator of fire intensity: longer flame lengths increase resistance to control and the likelihood of torching events and crown fires.

Fuel Arrangement—Describes how fuels are distributed in the fuel bed.

Fuel Bed—The fuels laying on or very near the forest floor, both living and dead, that are available to burn.

Fuel Load/Loading—Green fuels are not included weight/quantity of fuel present at a given site—usually expressed in tons per acre. This value generally refers to the fuel that would be available for consumption by fire. Fuel load and depth are significant fuel properties for predicting whether a fire will be ignited, its rate of spread, and its intensity. Fuel loading can slow the suppression efforts of firefighters if there are large accumulations of dead and down fuel.

Fuel Reduction Zone—This is a zone that is designed to protect improvements/structures and natural resources from wildland fires. The zone is accessible to firefighters, usually along roads. The fuel loads in the zone are light enough to cause approaching wildfires to drop to the ground, and to reduce the number of spot fires that cross the zone, so fires may be successfully attacked by engines and handcrews on very high fire to extreme fire danger days.

Fuels—Anything within the forest that will burn. Usually live and dead woody vegetation.

Fuel Strata—This is the vertical and horizontal continuity and arrangement of the fuel bed.

Fuel Treatment—The process of removal, consumption, or rearrangement of naturally or human-created fuels to reduce fire hazard and achieve other resource objectives.

Hazard—When used in fuels management, refers to the existence of a fuel complex that constitutes a threat of unacceptable fire behavior and severity, or suppression difficulty.

Ladder Fuel—A vertical continuity in fuel between the ground and the crowns of a forest stand; shrubs or trees that connect fuels at the forest floor to the tree crowns. Ladder fuels are expressed in feet.



Multilayer—A stand with three or more distinct foliage layers (canopies). Trees in the different layers may or may not be in the same age class.

Rate of Spread—The estimated or observed spread distance of a fire. It is expressed generally in chains per hour (ch/hr).

Stand—A recognizable area of the forest (either a community of trees or other vegetation) that can be managed as a single unit because it is relatively homogeneous (having uniform composition, constitution, age, spatial arrangement or condition) and distinguishable from adjacent communities.

Stand Characteristics/ Attributes—A description of stand characteristics takes into account canopy cover, crown bulk density, stand structure, and density. Stand structure is a description of the distribution of tree size classes (such as saplings, poles, small trees, etc.) within a stand. Understory and overstory are some other terms that are used in referring to stand structure.

Surface Fire—A fire that burns dead and down woody fuel and smaller vegetation with little to no torching of larger shrubs and conifers. Surface fire activity is described primarily with rate of spread and flame length.

Torching (Event)—The envelopment in flame of live or dead branches on a standing tree or group of trees.

Values at Risk—Any or all natural resources, improvements, or other values that may be jeopardized if a fire occurs.

Wildland-Urban Interface—Commonly referred to as the WUI (woo-ee). This is an area, or zone, where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. It generally extends out for 1.5 miles from the edge of developed private land into the wildland.