

# Glossary of Wildland Fire Terms

## A

**Aerial Ignition:** Ignition of fuels by dropping incendiary devices or materials from aircraft.

**Air Tanker:** A fixed-wing aircraft equipped to drop fire retardants or suppressants.

**Aspect:** Direction toward which a slope faces.

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## B

**Backfire:** A fire set along the inner edge of a fireline to consume the fuel in the path of a wildfire and/or change the direction of force of the fire's convection column.

**Backpack Pump:** A portable sprayer with hand-pump, fed from a liquid-filled container fitted with straps, used mainly in fire and pest control.

**Blow-up:** A sudden increase in fire intensity or rate of spread strong enough to prevent direct control or to upset control plans. Blow-ups are often accompanied by violent convection and may have other characteristics of a fire storm.

**.Bucket Drops:** The dropping of fire retardants or suppressants from specially designed buckets slung below a helicopter.

**Buffer Zones:** An area of reduced vegetation that separates wildlands from vulnerable residential or business developments. This barrier is similar to a greenbelt in that it is usually used for another purpose such as agriculture, recreation areas, parks, or golf courses.

**Burn Out:** Setting fire inside a control line to widen it or consume fuel between the edge of the fire and the control line.

**Burning Index:** An estimate of the potential difficulty of fire containment as it relates to the flame length at the most rapidly spreading portion of a fire's perimeter.

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

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## C

**Chain:** A unit of linear measurement equal to 66 feet.

**Cold Front:** The leading edge of a relatively cold air mass that displaces warmer air. The heavier cold air may cause some of the warm air to be lifted. If the lifted air contains enough moisture, the result may be cloudiness, precipitation, and thunderstorms. If both air masses are dry, no clouds may form. Following

the passage of a cold front in the Northern Hemisphere, westerly or northwesterly winds of 15 to 30 or more miles per hour often continue for 12 to 24 hours.

**Cold Trailing:** A method of controlling a partly dead fire edge by carefully inspecting and feeling with the hand for heat to detect any fire, digging out every live spot, and trenching any live edge.

**Command Staff:** The command staff consists of the information officer, safety officer and liaison officer. They report directly to the incident commander and may have assistants.

**Contain a fire:** A fuel break around the fire has been completed. This break may include natural barriers or manually and/or mechanically constructed line.

**Control a fire:** The complete extinguishment of a fire, including spot fires. Fireline has been strengthened so that flare-ups from within the perimeter of the fire will not break through this line.

**Control Line:** All built or natural fire barriers and treated fire edge used to control a fire.

**Creeping Fire:** Fire burning with a low flame and spreading slowly.

**Crew Boss:** A person in supervisory charge of usually 16 to 21 firefighters and responsible for their performance, safety, and welfare.

**Crown Fire (Crowning):** The movement of fire through the crowns of trees or shrubs more or less independently of the surface fire.

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## D

**Debris Burning:** A fire spreading from any fire originally set for the purpose of clearing land or for rubbish, garbage, range, stubble, or meadow burning.

**Defensible Space:** An area either natural or manmade where material capable of causing a fire to spread has been treated, cleared, reduced, or changed to act as a barrier between an advancing wildland fire and the loss to life, property, or resources. In practice, "defensible space" is defined as an area a minimum of 30 feet around a

**Direct Attack:** Any treatment of burning fuel, such as by wetting, smothering, or chemically quenching the fire or by physically separating burning from unburned fuel.

**Dispatcher:** A person employed who receives reports of discovery and status of fires, confirms their locations, takes action promptly to provide people and equipment likely to be needed for control in first attack, and sends them to the proper place.

**Dispatch Center:** A facility from which resources are directly assigned to an incident.

**Dozer Line:** Fire line constructed by the front blade of a dozer.

**Drip Torch:** Hand-held device for igniting fires by dripping flaming liquid fuel on the materials to be burned; consists of a fuel fount, burner arm, and igniter. Fuel used is generally a mixture of diesel and gasoline.

Drought Index: A number representing net effect of evaporation, transpiration, and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

Dry Lightning Storm: Thunderstorm in which negligible precipitation reaches the ground. Also called a dry storm.

Duff: The layer of decomposing organic materials lying below the litter layer of freshly fallen twigs, needles, and leaves and immediately above the mineral soil.

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## E

Energy Release Component (ERC): The computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire.

Engine: Any ground vehicle providing specified levels of pumping, water and hose capacity.

Engine Crew: Firefighters assigned to an engine. The Fireline Handbook defines the minimum crew makeup by engine type.

Entrapment: A situation where personnel are unexpectedly caught in a fire behavior-related, life-threatening position where planned escape routes or safety zones are absent, inadequate, or compromised. An entrapment may or may not include deployment of a fire shelter for its intended purpose. These situations may or may not result in injury. They include "near misses."

Escape Route: A preplanned and understood route firefighters take to move to a safety zone or other low-risk area, such as an already burned area, previously constructed safety area, a meadow that won't burn, natural rocky area that is large enough to take refuge without being burned. When escape routes deviate from a defined physical path, they should be clearly marked (flagged).

Escaped Fire: A fire which has exceeded or is expected to exceed initial attack capabilities or prescription.

Extreme Fire Behavior: "Extreme" implies a level of fire behavior characteristics that ordinarily precludes methods of direct control action. One or more of the following is usually involved: high rate of spread, prolific crowning and/or spotting, presence of fire whirls, strong convection column. Predictability is difficult because such fires often exercise some degree of influence on their environment and behave erratically, sometimes dangerously.

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## F

Field Observer: Person responsible to the Situation Unit Leader for collecting and reporting information about an incident obtained from personal observations and interviews.

Fingers of a Fire: The long narrow extensions of a fire projecting from the main body.

Fire Behavior: The manner in which a fire reacts to the influences of fuel, weather and topography.

**Fire Behavior Forecast:** Prediction of probable fire behavior, usually prepared by a Fire Behavior Officer, in support of fire suppression or prescribed burning operations.

**Fire Behavior Specialist:** A person responsible to the Planning Section Chief for establishing a weather data collection system and for developing fire behavior predictions based on fire history, fuel, weather and topography.

**Fire Break:** A natural or constructed barrier used to stop or check fires that may occur, or to provide a control line from which to work.

**Fire Cache:** A supply of fire tools and equipment assembled in planned quantities or standard units at a strategic point for exclusive use in fire suppression.

**Fire Crew:** An organized group of firefighters under the leadership of a crew leader or other designated official.

**Fire Front:** The part of a fire within which continuous flaming combustion is taking place. Unless otherwise specified the fire front is assumed to be the leading edge of the fire perimeter. In ground fires, the fire front may be mainly smoldering combustion.

**Fire Intensity:** A general term relating to the heat energy released by a fire.

**Fire Line:** A linear fire barrier that is scraped or dug to mineral soil.

**Fire Management Plan (FMP):** A strategic plan that defines a program to manage wildland and prescribed fires and documents the Fire Management Program in the approved land use plan. The plan is supplemented by operational plans such as preparedness plans, preplanned dispatch plans, prescribed fire plans, and prevention plans.

**Fire Perimeter:** The entire outer edge or boundary of a fire.

**Fire Shelter:** An aluminized tent offering protection by means of reflecting radiant heat and providing a volume of breathable air in a fire entrapment situation. Fire shelters should only be used in life-threatening situations, as a last resort.

**Fire Shelter Deployment:** The removing of a fire shelter from its case and using it as protection against fire.

**Fire Storm:** Violent convection caused by a large continuous area of intense fire. Often characterized by destructively violent surface indrafts, near and beyond the perimeter, and sometimes by tornado-like whirls.

**Fire Triangle:** Instructional aid in which the sides of a triangle are used to represent the three factors (oxygen, heat, fuel) necessary for combustion and flame production; removal of any of the three factors causes flame production to cease.

**Fire Use Module (Prescribed Fire Module):** A team of skilled and mobile personnel dedicated primarily to prescribed fire management. These are national and interagency resources, available throughout the prescribed fire season, that can ignite, hold and monitor prescribed fires.

**Flame Height:** The average maximum vertical extension of flames at the leading edge of the fire front. Occasional flashes that rise above the general level of flames are not considered. This distance is less than the flame length if flames are tilted due to wind or slope.

**Flame Length:** The distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface); an indicator of fire intensity.

**Flaming Front:** The zone of a moving fire where the combustion is primarily flaming. Behind this flaming zone combustion is primarily glowing. Light fuels typically have a shallow flaming front, whereas heavy fuels have a deeper front. Also called fire front.

**Flanks of a Fire:** The parts of a fire's perimeter that are roughly parallel to the main direction of spread.

**Flare-up:** Any sudden acceleration of fire spread or intensification of a fire. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

**Flash Fuels:** Fuels such as grass, leaves, draped pine needles, fern, tree moss and some kinds of slash, that ignite readily and are consumed rapidly when dry. Also called fine fuels.

**Fuel Loading:** The amount of fuel present expressed quantitatively in terms of weight of fuel per unit area.

**Fuel Model:** Simulated fuel complex (or combination of vegetation types) for which all fuel descriptors required for the solution of a mathematical rate of spread model have been specified.

**Fuel Moisture (Fuel Moisture Content):** The quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

**Fuel Reduction:** Manipulation, including combustion, or removal of fuels to reduce the likelihood of ignition and/or to lessen potential damage and resistance to control.

**Fuel Type:** An identifiable association of fuel elements of a distinctive plant species, form, size, arrangement, or other characteristics that will cause a predictable rate of fire spread or difficulty of control under specified weather conditions.

**Fusee:** A colored flare designed as a railway warning device and widely used to ignite suppression and prescription fires.

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## G

**Ground Fuel:** All combustible materials below the surface litter, including duff, tree or shrub roots, punchy wood, peat, and sawdust, that normally support a glowing combustion without flame.

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## H

**Haines Index:** An atmospheric index used to indicate the potential for wildfire growth by measuring the stability and dryness of the air over a fire.

**Hand Line:** A fireline built with hand tools.

**Hazard Reduction:** Any treatment of a hazard that reduces the threat of ignition and fire intensity or rate of spread.

Head of a Fire: The side of the fire having the fastest rate of spread.

Helibase: The main location within the general incident area for parking, fueling, maintaining, and loading helicopters. The helibase is usually located at or near the incident base.

Helispot: A temporary landing spot for helicopters.

Helitack: The use of helicopters to transport crews, equipment, and fire retardants or suppressants to the fire line during the initial stages of a fire.

Holding Actions: Planned actions required to achieve wildland prescribed fire management objectives. These actions have specific implementation timeframes for fire use actions but can have less sensitive implementation demands for suppression actions.

Holding Resources: Firefighting personnel and equipment assigned to do all required fire suppression work following fireline construction but generally not including extensive mop-up.

Hose Lay: Arrangement of connected lengths of fire hose and accessories on the ground, beginning at the first pumping unit and ending at the point of water delivery.

Hotshot Crew: A highly trained fire crew used mainly to build fireline by hand.

Hotspot: A particular active part of a fire.

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## I

Incident Action Plan (IAP): Contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written. When written, the plan may have a number of attachments, including: incident objectives, organization assignment list, division assignment, incident radio communication plan, medical plan, traffic plan, safety plan, and incident map.

Incident Command Post (ICP): Location at which primary command functions are executed. The ICP may be co-located with the incident base or other incident facilities.

Incident Command System (ICS): The combination of facilities, equipment, personnel, procedure and communications operating within a common organizational structure, with responsibility for the management of assigned resources to effectively accomplish stated objectives pertaining to an incident.

Incident Commander: Individual responsible for the management of all incident operations at the incident site.

Incident Management Team: The incident commander and appropriate general or command staff personnel assigned to manage an incident.

Infrared Detection: The use of heat sensing equipment, known as Infrared Scanners, for detection of heat sources that are not visually detectable by the normal surveillance methods of either ground or air patrols.

Initial Attack: The actions taken by the first resources to arrive at a wildfire to protect lives and property, and prevent further extension of the fire.

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## L

Ladder Fuels: Fuels which provide vertical continuity between strata, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease. They help initiate and assure the continuation of crowning.

Lead Plane: Aircraft with pilot used to make dry runs over the target area to check wind and smoke conditions and topography and to lead air tankers to targets and supervise their drops.

Lightning Activity Level (LAL): A number, on a scale of 1 to 6, which reflects frequency and character of cloud-to-ground lightning. The scale is exponential, based on powers of 2 (i.e., LAL 3 indicates twice the lightning of LAL 2).

Litter: Top layer of the forest, scrubland, or grassland floor, directly above the fermentation layer, composed of loose debris of dead sticks, branches, twigs, and recently fallen leaves or needles, little altered in structure by decomposition.

## M

Mobilization: The process and procedures used by all organizations, federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Mop-up: To make a fire safe or reduce residual smoke after the fire has been controlled by extinguishing or removing burning material along or near the control line, felling snags, or moving logs so they won't roll downhill.

## N

National Environmental Policy Act (NEPA): NEPA is the basic national law for protection of the environment, passed by Congress in 1969. It sets policy and procedures for environmental protection, and authorizes Environmental Impact Statements and Environmental Assessments to be used as analytical tools to help federal managers make decisions.

National Fire Danger Rating System (NFDRS): A uniform fire danger rating system that focuses on the environmental factors that control the moisture content of fuels.

National Wildfire Coordinating Group: A group formed under the direction of the Secretaries of Agriculture and the Interior and comprised of representatives of the U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, National Park Service, U.S. Fish and Wildlife Service and Association of State Foresters. The group's purpose is to facilitate coordination and effectiveness of

wildland fire activities and provide a forum to discuss, recommend action, or resolve issues and problems of substantive nature. NWCG is the certifying body for all courses in the National Fire Curriculum.

Nomex ®: Trade name for a fire resistant synthetic material used in the manufacturing of flight suits and pants and shirts used by firefighters (see Aramid).

## O

**Operational Period:** The period of time scheduled for execution of a given set of tactical actions as specified in the Incident Action Plan. Operational periods can be of various lengths, although usually not more than 24 hours.

**Overhead:** People assigned to supervisory positions, including incident commanders, command staff, general staff, directors, supervisors, and unit leaders.

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## P

**Pack Test:** Used to determine the aerobic capacity of fire suppression and support personnel and assign physical fitness scores. The test consists of walking a specified distance, with or without a weighted pack, in a predetermined period of time, with altitude corrections.

**Personnel Protective Equipment (PPE):** All firefighting personnel must be equipped with proper equipment and clothing in order to mitigate the risk of injury from, or exposure to, hazardous conditions encountered while working. PPE includes, but is not limited to: 8-inch high-laced leather boots with lug soles, fire shelter, hard hat with chin strap, goggles, ear plugs, aramid shirts and trousers, leather gloves and individual first aid kits.

**Preparedness:** Condition or degree of being ready to cope with a potential fire situation

**Prescribed Fire:** Any fire ignited by management actions under certain, predetermined conditions to meet specific objectives related to hazardous fuels or habitat improvement. A written, approved prescribed fire plan must exist, and NEPA requirements must be met, prior to ignition.

**Prescribed Fire Plan (Burn Plan):** This document provides the prescribed fire burn boss information needed to implement an individual prescribed fire project.

**Prescription:** Measurable criteria that define conditions under which a prescribed fire may be ignited, guide selection of appropriate management responses, and indicate other required actions. Prescription criteria may include safety, economic, public health, environmental, geographic, administrative, social, or legal considerations.

**Prevention:** Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards.

**Pulaski:** A combination chopping and trenching tool, which combines a single-bitted axe-blade with a narrow adze-like trenching blade fitted to a straight handle. Useful for grubbing or trenching in duff and matted roots. Well-balanced for chopping.



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## R

**Rate of Spread:** The relative activity of a fire in extending its horizontal dimensions. It is expressed as a rate of increase of the total perimeter of the fire, as rate of forward spread of the fire front, or as rate of increase in area, depending on the intended use of the information. Usually it is expressed in chains or acres per hour for a specific period in the fire's history.

**Reburn:** The burning of an area that has been previously burned but that contains flammable fuel that ignites when burning conditions are more favorable; an area that has reburned.

**Red Card:** Fire qualification card issued to fire rated persons showing their training needs and their qualifications to fill specified fire suppression and support positions in a large fire suppression or incident organization.

**Red Flag Warning:** Term used by fire weather forecasters to alert forecast users to an ongoing or imminent critical fire weather pattern.

**Rehabilitation:** The activities necessary to repair damage or disturbance caused by wildland fires or the fire suppression activity.

**Relative Humidity (Rh):** The ratio of the amount of moisture in the air, to the maximum amount of moisture that air would contain if it were saturated. The ratio of the actual vapor pressure to the saturated vapor pressure.

**Remote Automatic Weather Station (RAWS):** An apparatus that automatically acquires, processes, and stores local weather data for later transmission to the GOES Satellite, from which the data is re-transmitted to an earth-receiving station for use in the National Fire Danger Rating System.

**Resource Management Plan (RMP):** A document prepared by field office staff with public participation and approved by field office managers that provides general guidance and direction for land management activities at a field office. The RMP identifies the need for fire in a particular area and for a specific benefit.

**Resource Order:** An order placed for firefighting or support resources.

**Retardant:** A substance or chemical agent which reduced the flammability of combustibles.

**Run (of a fire):** The rapid advance of the head of a fire with a marked change in fire line intensity and rate of spread from that noted before and after the advance.

## S

**Safety Zone:** An area cleared of flammable materials used for escape in the event the line is outflanked or in case a spot fire causes fuels outside the control line to render the line unsafe. In firing operations, crews progress so as to maintain a safety zone close at hand allowing the fuels inside the control line to be consumed before going ahead. Safety zones may also be constructed as integral parts of fuel breaks; they are greatly enlarged areas which can be used with relative safety by firefighters and their equipment in the event of a blowup in the vicinity.

**Scratch Line:** An unfinished preliminary fire line hastily established or built as an emergency measure to check the spread of fire.

**Size-up:** To evaluate a fire to determine a course of action for fire suppression.

**Slash:** Debris left after logging, pruning, thinning or brush cutting; includes logs, chips, bark, branches, stumps and broken understory trees or brush.

**Sling Load:** Any cargo carried beneath a helicopter and attached by a lead line and swivel.

**Slop-over:** A fire edge that crosses a control line or natural barrier intended to contain the fire.

**Smokejumper:** A firefighter who travels to fires by aircraft and parachute.

**Smoke Management:** Application of fire intensities and meteorological processes to minimize degradation of air quality during prescribed fires.

**Snag:** A standing dead tree or part of a dead tree from which at least the smaller branches have fallen.

**Spark Arrester:** A device installed in a chimney, flue, or exhaust pipe to stop the emission of sparks and burning fragments.

**Spot Fire:** A fire ignited outside the perimeter of the main fire by flying sparks or embers.

**Spot Weather Forecast:** A special forecast issued to fit the time, topography, and weather of each specific fire. These forecasts are issued upon request of the user agency and are more detailed, timely, and specific than zone forecasts.

**Spotting:** Behavior of a fire producing sparks or embers that are carried by the wind and start new fires beyond the zone of direct ignition by the main fire.

**Staging Area:** Locations set up at an incident where resources can be placed while awaiting a tactical assignment on a three-minute available basis. Staging areas are managed by the operations section.

**Structure Fire:** Fire originating in and burning any part or all of any building, shelter, or other structure.

**Suppressant:** An agent, such as water or foam, used to extinguish the flaming and glowing phases of combustion when direction applied to burning fuels.

**Suppression:** All the work of extinguishing or containing a fire, beginning with its discovery.

## T

**Test Fire:** A small fire ignited within the planned burn unit to determine the characteristic of the prescribed fire, such as fire behavior, detection performance and control measures.

**Torching:** The ignition and flare-up of a tree or small group of trees, usually from bottom to top.

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## U

**Uncontrolled Fire:** Any fire which threatens to destroy life, property, or natural resources, and

Underburn: A fire that consumes surface fuels but not trees or shrubs. (See Surface Fuels.)

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**V**

Volunteer Fire Department (VFD): A fire department of which some or all members are unpaid.

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**W**

Water Tender: A ground vehicle capable of transporting specified quantities of water.

Wet Line: A line of water, or water and chemical retardant, sprayed along the ground, that serves as a temporary control line from which to ignite or stop a low-intensity fire.

Wildland Fire: Any nonstructure fire, other than prescribed fire, that occurs in the wildland.

Wildland Fire Use: The management of naturally ignited wildland fires to accomplish specific prestated resource management objectives in predefined geographic areas outlined in Fire Management Plans.

Wildland Urban Interface: The line, area or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.