



## WILDLAND FIREFIGHTING TERMINOLOGY GLOSSARY

### A

#### **Aerial Fuels**

All live and dead vegetation in the forest canopy or above surface fuel level including tree branches, twigs, cones, snags, moss and high brush.

#### **Airtanker**

Fixed-wing aircraft capable of dropping fire retardant.

#### **Anchor Point**

Advantageous location from which to start building a fire line.

### B

#### **Backfire**

Fire set along the inner edge of a fireline to consume fuel in the path of an existing wildfire. Operation is designed to change the direction of or slow down the existing wildfire by removing its fuel.

#### **Blow-up**

Sudden increase in fire intensity or rate of spread that is strong enough to prevent direct control or upset control plans.

#### **Brush**

Collective term for vegetation dominated by shrubby, woody plants or low growing trees; usually undesirable for livestock or timber management.

#### **Brush Fire**

Fire burning in vegetation that is predominantly shrubs, brush and scrub growth.

#### **Burn Ban**

Declared ban on outdoor burning, usually because of high-to-extreme fire danger. Texas A&M Forest Service does not have the authority to enact or rescind burn bans. The agency provides information about weather conditions and fire danger to county officials, who make the decision locally on a county-by-county basis.

#### **Burn Out**

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

#### **Burning Conditions**

Combined environmental factors that affect fire behavior in a specific fuel type.

#### **Burning Period**

Time of the day when fires spread most rapidly; typically from 10 a.m. to sundown.

## **C**

### **Candle or Candling**

Single tree in a very small clump of trees that is burning from the bottom, up.

### **Chain**

Unit of linear measurement equal to 66 feet; often used to describe the length of a fireline or the forward rate of spread on a fire. Eighty chains equal one mile.

### **Closure**

Legal restriction — but not necessarily elimination — of specific activities such as smoking, camping or access to a designated area.

### **Complex**

Two or more individual fires located in the same general area and assigned to a single incident commander or unified command.

### **Confine a Fire**

Least aggressive wildfire suppression strategy; typically allows the wildfire to burn itself out within established, natural boundaries such as rocky ridges, streams or roads under prevailing conditions.

### **Contain a Fire**

When a fire is contained, it is surrounded by a fuel break. This break can include natural barriers as well as line constructed manually or mechanically. The fire is not extinguished at this point.

### **Control a Fire**

When a fire is *controlled*, it is surrounded by control line, its forward progression has been stopped and it is not expected to escape under foreseeable conditions. It is not completely extinguished, but it no longer poses a direct threat to surrounding homes or property.

### **Control Line**

Inclusive term for all constructed or natural fire barriers — including swaths of fire retardant — used to control a fire.

### **Creeping Fire**

Fire burning on the ground with a low flame and spreading slowly.

### **Crown Fire (Crowning)**

Movement of fire through the tops of trees and shrubs, usually independent of the surface fire.

### **Curing**

Drying and browning of herbaceous vegetation or slash.



## **D**

### **Dead Fuels**

Fuels with no living tissue, which means moisture content is governed almost entirely by atmospheric moisture (relative humidity and precipitation), dry-bulb temperature and solar radiation.

### **Debris Burning**

Fire intentionally set to clear the land or eliminate garbage and other debris.

### **Defensible Space**

Natural or manmade area spanning at least 30 feet around a structure where combustible material has been cleared or removed, providing a barrier between you and an advancing wildfire.

### **Direct Attack**

Any treatment of burning fuel such as wetting, smothering or chemically quenching the fire or by physically separating burned and unburned fuel.

### **Dozer**

Any tracked vehicle with a front-mounted blade used for exposing mineral soil.

### **Dozer Line**

Fireline constructed by the front blade of a dozer.

### **Drip Torch**

Hand-held device used to ignite fires by dripping flaming liquid torch fuel on the materials to be burned. Torch fuel generally is a mix of diesel and gasoline.

### **Drop Zone**

Target area for air tankers, helitankers and cargo dropping.

**Drought Index** – Number representing the difference between normal and current moisture conditions. Net effect of evaporation, transpiration and precipitation in producing cumulative moisture depletion in deep duff or upper soil layers.

### **Duff**

Layer of decomposing organic materials lying just below the litter layer of freshly fallen twigs, needles and leaves, and just above the bare, mineral soil.

## **E**

### **Ecosystem**

Area of land distinguished by certain physical features, as well as its ability to sustain certain plants and animals.



**Energy Release Component**

Computed total heat released per unit area (British thermal units per square foot) within the fire front at the head of a moving fire. Used by fire managers to assess the potential fire behavior in forest fuels.

**Engine**

Any ground level machine providing specified levels of pumping, water and hose capacity.

**Engine Crew**

Firefighters assigned to a type of engine. Minimum crew make up is determined by engine type as outlined in the Fireline Handbook.

**Entrapment**

Situation in which crews are caught unexpectedly in a life-threatening position with planned escape routes or safety zones compromised, likely because of fire behavior. Entrapment may or may not result in fire shelter deployment or injuries.

**Escape Route**

Planned route allowing firefighters safe passage to a designated safety zone. When escape routes deviate from a defined, physical path, they should be clearly flagged.

**Escaped Fire**

Fire that continues to spread despite initial attack fire suppression efforts. Also applies to prescribed fire that exceeds its prescription.

**Extended Attack**

Suppression activity for a wildfire that has not been contained or controlled by initial attack or contingency forces. Additional firefighting resources generally are needed for extended attack.

**F**

**Faller**

Person who fells (cuts down) trees. Also called a sawyer or cutter.

**Fell**

Cut or knock down; usually refers to a tree.

**Fingers of a Fire**

Long, narrow extensions of a fire projecting from the main body.

**Fire Behavior**

Manner in which a fire reacts to fuel, weather and topography.

**Fire Behavior Forecast**

Prediction of probable fire behavior, usually by fire behavior analysts.

**Fire Break**

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**

Supply of fire tools and equipment assembled at a strategic point for exclusive use in fire suppression.

**Fire Crew**

Organized group of firefighters under the supervision of a crew leader or other designated official.

**Fire Danger**

Probability — based on weather, fuel moisture and other factors — of a fire occurring, and the likelihood of it spreading. Danger is categorized as low, moderate, high or extreme.

**Fire-Dependent Species** – Plant and animal species that are dependent on fire to survive. Lodgepole pine is an example; heat from the fire opens pine cones, allowing seeds to spread and naturally reforest an area.

**Fire Front**

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**

Amount of heat generated by a fire.

**Fireline**

Linear fire barrier that is scraped or dug down to mineral soil — by hand or mechanically. More generally, the term “on the fireline” is used to describe working a fire.

**Fire Perimeter**

Entire outer edge or boundary of a fire.

**Fire Plow**

Heavy duty plowshare or disc usually pulled behind a tractor to construct a fireline.

**Fire Season**

Period or periods of the year when wildfires are likely to occur, spread and affect resource values sufficient to warrant organized fire management activities. Texas does not have a set fire season, though fire activity historically picks up in late summer and then again after the first freeze, lasting until spring rains bring about vegetative green-up. Consider the driest part of the state, the Trans Pecos region, in particular, generally sees an increase in wildfires in the spring.

A formal Texas fire season is declared when fire activity and requests for help from local departments begin to increase.

**Fire Shelter**

Safety device used as a last resort by wildland firefighters who are trapped by wildfire. The small, aluminized tent provides protection by reflecting radiant heat and offering a small amount of breathable air.

**Fire Triangle**

Instructional aid in which the sides of a triangle are used to represent the three factors — oxygen, heat and fuel — necessary for combustion and flame production. Removal of any of the three factors ceases flame production.

**Fire Weather**

Weather conditions that influence fire ignition, behavior and suppression.

**Fire Weather Watch**

Term used by National Weather Service fire weather forecasters to notify fire managers, usually 24 to 72 hours in advance, that current and developing meteorological conditions may evolve into dangerous fire weather.

**Firefighting Resources**

All people and major items of equipment that can or potentially could be assigned to fires.

**Flame Length**

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.

**Flanks of a Fire**

Parts of a fire's perimeter that are roughly parallel to the main direction of spread.

**Flare-up**

Any sudden increase in fire spread or intensity. Unlike a blow-up, a flare-up lasts a relatively short time and does not radically change control plans.

**Flash Fuels**

Fuels — 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 or light fuels.

**Fuel**

Combustible material — such as grass, leaves, ground litter, plants, shrubs, trees and other vegetation — that feed a fire.

**Fuel Moisture (Fuel Moisture Content)**

Quantity of moisture in fuel expressed as a percentage of the weight when thoroughly dried at 212 degrees Fahrenheit.

**Fuel Reduction**

Removing fuels to reduce the likelihood of a future wildfire, or make it easier to control if one should occur.

**Fuel type**

Refers to the type of vegetation in which a fire is burning. Used in predicting fire behavior and determining what effects a fire may have in a given area.

**G****Green-up**

Beginning of a new cycle of plant growth.

**Ground Fuel**

All combustible materials below the surface litter — including duff, tree or shrub roots, punchy wood, peat and saw dust — that normally support a glowing combustion without flame.

**H****Hand Line**

Fireline built with hand tools.

**Head of Fire**

Side of fire with the fastest rate of spread.

**Heavy Fuels**

Large diameter fuels — such as snags, logs and large limbs — that ignite and burn slower than flash fuels.

**Heavy Helicopter**

Large helicopter capable of dropping water via a bucket or tank in its belly; generally capable of carrying 800 to 1,000 gallons of water, though some can carry up to 2,000 gallons.

**Helibase**

Main location for parking, fueling, maintaining and loading helicopters.

**Helispot**

Temporary landing spot for helicopters.

**Helitack**

Helicopter used to transport crews, equipment and fire retardants to the fire during its initial stages.

**Helitack Crew**

Group of firefighters trained in the technical and logistical use of helicopters for fire suppression.

**Helitanker**

Helicopter equipped with a fixed tank in its belly and capable of dropping at least 1,100 gallons of water.



**Hotshot Crew**

Highly-trained fire crew used primarily to build fireline by hand.

**Hotspot**

Particularly active part of the fire.

**I**

**Incident**

Manmade or natural disaster — wildfire, hurricane, flood, explosion, etc. — that requires emergency responders to prevent or reduce casualties and damages.

**Incident Command Post (ICP)**

Field headquarters for tactical, on-the-ground operations; overseen by incident commander and his staff.

**Incident Command System (ICS)**

Set of facilities, equipment, personnel and procedures integrated into a common organizational structure. Allows emergency responders to communicate with each other, better manage their resources and effectively accomplish the incident goals.

**Incident Commander**

Person responsible for all assigned aspects of the emergency response.

**Incident Management Team**

Incident commander and appropriate general or command staff assigned to manage an incident.

**Incident Objectives**

Guiding statements that help fire managers determine appropriate strategies and tactics. Based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed.

**Initial Attack**

Actions taken by the first firefighters to arrive on scene.

**K**

**Keech Byram Drought Index (KBDI)**

Drought index based on precipitation and soil moisture and used to determine wildfire potential. Ranges from 0 (no moisture depletion) to 800 (absolutely dry conditions).

**Knock Down**

Reduce the flame or heat on vigorously-burning parts of a fire edge.



## L

### **LCES**

Lookout, Communication, Escape Route, Safety Zone; acronym used to describe the elements of a safety system used by wildland firefighters to routinely assess their current situation.

### **Ladder Fuels**

Fuels that carry fire from the ground to the tree tops, often leading to crowning.

### **Lead plane**

Aircraft that directs tactical deployment of airtankers. Makes initial dry run over a targeted area to check wind and smoke conditions and topography, and then leads airtankers to their targets and supervises their drops.

### **Litter**

Top layer of the forest or grassland floor, composed of loose debris of dead sticks, branches, twigs and recently fallen leaves or needles.

### **Live Fuels**

Living plants — such as trees, grasses and shrubs — in which the seasonal moisture content cycle is controlled largely by internal physiological mechanisms rather than by external weather influences.

## M

### **Mineral Soil**

Soil with little combustible material; found in the layers below the predominantly organic horizons.

### **Mobilization**

Process and procedures used by federal, state and local organizations for activating, assembling and transporting resources that have been requested to respond to an incident.

### **Modular Airborne Firefighting System (MAFFS)**

A unit mounted inside a C-130 cargo aircraft for use in dropping retardant on wildfires.

### **Mop-up**

Extinguishing or removing burning material on a fire after it's been controlled. Designed to make the fire safer and reduce residual smoke.

### **Mutual Aid Agreement**

Written agreement between agencies and jurisdictions allowing them to assist one another during times of need.



## N

### **National Wildfire Coordinating Group**

Tasked with coordinating the effectiveness of all wildfire activities, providing a forum to discuss and resolve problems and certifying all courses in the National Fire Curriculum.

Formed under the direction of the Secretaries of Agriculture and the Interior and made up 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.

### **Nomex**

Trade name for a fire resistant, synthetic material used in the manufacturing of flight suits and wildland firefighting pants and shirts.

## O

### **Operational Period**

Time period allotted for execution of a given set of tactical actions; usually not more than 24 hours.

### **Overhead**

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

## P

### **Personnel Protective Equipment (PPE)**

Clothing and equipment designed to keep wildland firefighters safe. Includes but isn't limited to 8-inch high leather boots, fire shelter, hard hat, goggles, ear plugs, Nomex pants and shirt and leather gloves.

### **Prescribed Fire**

Fire ignited intentionally under certain, predetermined conditions to meet specific land management objectives related to hazardous fuels reduction or habitat improvement. A written prescribed fire plan must be approved prior to the fire, and National Environmental Policy Act requirements must be met.

### **Prescribed Fire Plan**

Comprehensive plan developed by fire and land managers before a prescribed fire. Outlines predicted weather and fire conditions, as well as predicted fire behavior and the risks associated with the burn. Provides the burn boss with information needed to implement the project.

### **Prescription**

Measurable criteria that define the conditions — fuel moisture, wind, temperature, relative humidity — under which a prescribed fire may be ignited, and guide the selection of appropriate management responses.

**Prevention**

Activities — public education, law enforcement, fuel reduction, etc. — aimed at reducing wildfire occurrence.

**Project Fire**

Fire that is big enough in size and complexity that it requires a large organization of people to manage it and a prolonged attack to extinguish it.

**R****Rate of Spread**

The speed with which a fire grows or spreads; usually measured in miles or chains per hour.

**Reburn**

Fire burning in a previously burned area. Generally, fire already has swept through, but the area still contains flammable fuels that ignite when conditions are favorable.

**Red Card**

Wallet-sized card that certifies a person is trained and qualified to perform specific jobs on wildfires and other incidents.

**Red Flag Warning**

Fire weather forecaster term; alerts the public to an ongoing or imminent critical fire weather pattern.

**Rehabilitation**

Activities necessary to repair damage caused by wildfires or fire suppression.

**Relative Humidity (Rh)**

Ratio of the actual amount of moisture in the air compared to the maximum amount of moisture the air would contain if it were saturated. Low relative humidity results in dryer conditions and increased fire danger.

**Remote Automatic Weather Station (RAWS)**

Automated weather stations located in various places that take and record weather readings hourly. Information is used in the National Fire Danger Rating System.

**Resources**

People, equipment, supplies and services needed to manage a fire.

**Resource Order**

Formal request for firefighting or support resources.

**Retardant**

Chemical agent that reduces the flammability of combustibles.

**Run**

Rapid advance of the head of a fire; includes a marked change in fireline intensity and rate of spread.

**Running**

Rapidly spreading surface fire with a well-defined head.

**S****Safety Zone**

Large area that is cleared of flammable materials, giving firefighters a place to escape to if a wildfire breaks through the control line.

**Significant Fires**

Generally, fires that are 100 acres or larger in East Texas and 300 acres or larger in West Texas.

**Size-up**

Evaluation of the fire to determine what suppression efforts will be needed.

**Slop Over**

Fire that crosses a control line or natural barrier that was intended to contain it.

**Smoldering Fire**

Fire burning without flame and barely spreading.

**Snag**

Standing dead tree or part of a dead tree.

**Spot Fire**

Fire ignited by sparks or embers that are blown outside of the perimeter of the main fire.

**Spotting**

Fire producing sparks or embers that are carried by the wind and start new fires outside the perimeter of the main fire.

**Staging Area**

Established locations where resources can be placed while awaiting a tactical assignment.

**Strike Team**

Team composed of several of the same type of resources.

**Suppression**

All work related to extinguishing or containing a fire.

**Surface Fuels**

Loose litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones and small branches. Can be interspersed with grasses, forbs, low and medium shrubs, tree seedlings, heavier branches, downed logs and stumps.



## I

### **Tactics**

Plan to deploy and direct resources on an incident to accomplish objectives designated by strategy.

### **Task Force**

Team composed of different types of resources, but with a single purpose.

### **Temporary Flight Restrictions (TFR)**

Restricts the operation of nonessential aircraft in the airspace around an incident; generally requested by an agency and put into effect by the Federal Aviation Administration.

### **Texas Intrastate Fire Mutual Aid System (TIFMAS)**

A statewide mutual aid agreement that allows communities to call upon each other during times of need.

### **Torching**

Tree or small group of trees that suddenly erupts into flames, usually burning from the bottom, up.

### **Type**

Capability of a firefighting resource. Type 1 usually carries the greatest capability due to power, size and capacity.

## U

### **Uncontrolled Burn**

Any fire that threatens to destroy life, property or natural resources.

## V

### **Volunteer Fire Department**

Fire department with members who volunteer their time and are not paid.

## W

### **Water Tender**

Ground vehicle capable of transporting specified quantities of water.

### **Wet Line**

Line of water or water and retardant sprayed along the ground to serve as a temporary control line to stop a low intensity fire.

### **Wildfire**

Any non-structure fire — other than a prescribed fire — that occurs in the wildland.



**Wildland**

Area in which development is essentially non-existent except for roads, railroads, power lines and similar transportation or utility structures.

**Work Capacity (Pack) Test**

Physical fitness test required for wildland firefighters, as well as anyone else who may be working on the fireline. Test generally consists of walking a specified distance with or without a weighted pack in a predetermined amount of time.