
CERT WILDLAND
URBAN INTERFACE – PART C
*CITIZEN WILDLAND FIRE PREPAREDNESS &
BASIC CONCEPTS*

In this unit you will:

- ✍ **Learn About What Influences The Wildland/Urban Interface Fire:** How a fire in the WUI grows large and travels so quickly.
- ✍ **Understand The Relationship Between the Fire and Its Environment:** What are the key elements in successfully defending a structure against this type of fire.
- ✍ **Learn What Steps to Take In Preparing Your Home:** Urgent preparation in advance of a Wildland Fire can make the difference.
- ✍ **Learn About Pre-Treating Your Home:** There are suggested methods to take to allow your house a better chance of survival.
- ✍ **Become Aware of the Danger of Staying to Defend:** Evacuation orders should be followed by all. Understanding what the significant dangers are will assist you in feeling good about leaving.

FIRE BEHAVIOR

The three factors that influence the behavior of wildfire are:

- ✍ WEATHER
- ✍ TOPOGRAPHY
- ✍ FUELS

Weather:

- Temperature
- Relative humidity
- Atmospheric stability
- Wind speed and direction
- Precipitation
- Time:
 - All aspects of weather change continuously, affecting vegetative curing and fuel moisture
- Elevation:
 - Changes in weather patterns occur with changes in topography

Effects on Fire Behavior: These factors can increase the rate of fire spread and fire intensity.

Topography

- Elevation
- Position on slope
- Aspect
- Shape of the country
- Steepness of slope

Topography continued

- Time:
 - Generally considered to be constant
- Elevation:
 - Changes can be considerable especially in mountainous terrain.

Effects on Fire Behavior: These factors affect the rate and spread of fire.

Fuels

- Fuel loading
 - weight; how much
- Size & shape
 - 12-inch v. 10-feet
- Compactness
- Horizontal continuity
- Vertical continuity
- Chemical content (i.e., oil)
- Time:
 - Dead and live fuel moistures change.
 - Insect infestations/disease, harvesting/manipulation of vegetation, prescribed burns, and weather can alter fuels.
- Elevation:
 - Weather and topography alter fuels.

Effects on Fire Behavior: Fire intensity increases as more fuel becomes available.

THE RELATIONSHIP BETWEEN FIRE, FUELS AND SURVIVABILITY

Weather

- Heat can modify or produce local winds
- Heat can contribute to atmospheric instability
- Heat can cause cumulus cloud development

Fuels

- Fuel Temperature
- Fuel Moisture Content

Spot Fires, Brands & Burning Embers are influenced by:

CONVECTION

- Small pieces of burning material lifted in a convection column
- Carried a distance ahead of the fire front

WIND

- Causes short-range spotting of firebrands.
- When combined with strong convective currents:
 - Carries firebrands considerable distances downwind, causing long-range spotting.

GRAVITY

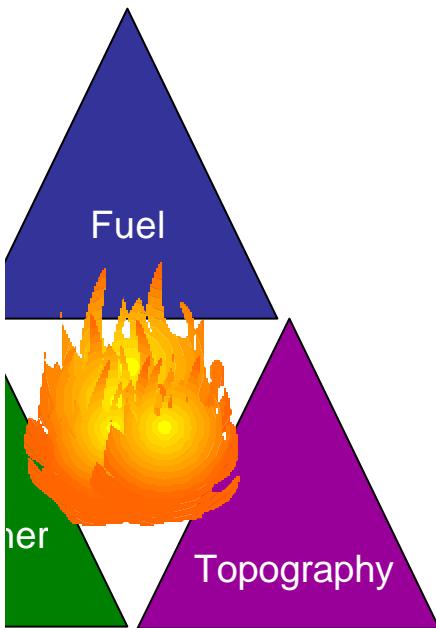
- Responsible for spotting of firebrands down slope.
- The steeper the slope, the greater the spotting problem.
- Burning material rolls down slope.

THE RELATIONSHIP BETWEEN FIRE, FUELS AND SURVIVABILITY

The relationship of...

- Fuels,
- Topography
- Weather

is similar to our original fire triangle...



While we can't change **topography**, and we can't change the **weather**,

We CAN... REMOVE or MODIFY THE FUELS

URGENT FUEL MODIFICATION

- Quickly reduce/remove flammable vegetation around structures:
 - 30-foot perimeter
 - 100-feet or MORE, depending on slope
- Separate trees/shrubs by at least 1 ½ times their height
- Keep weeds and grasses trimmed below 18-inches in height
- Tree limbs should be trimmed up at least 6-feet from the ground
- Remove leaf litter/needles from roofs, gutters & porches
- Stack lumber/firewood at least 30-feet from structures.
- Trim any limbs overhanging the house.
- Keep tree limbs and flammable shrubs at least 10-feet away from chimneys, heat vents, roof lines, eaves, and decking
- Work with neighbors.

FUEL MODIFICATION SAFETY

ALWAYS:

- Operate in pairs
- Operate within the scope of your training
- Wear appropriate safety gear and clothing
- Use ladders safely
 - Beware of unsafe roofs (i.e., Spanish tile, slate, etc.)
- Use a spotter when working with and around trees

DO NOT:

- Use steel blades on weed trimmers
- Use mowers

PRE-TREATMENT

Three ways to protect your home from wildfire:

- ✍ Water
- ✍ Foam*
- ✍ Gel*

*Only use USDA Forest Service Approved foams and gels (elastomers)

Water

- Typically applied by a yard sprinkler system.
- ***This is an unreliable method***
- Other problems:
 - evaporates quickly
 - needs a large volume of water
 - requires constant application
 - needs a constant water source
 - competes with other water users



Foam:

- Easy to apply, with minimal training and appropriate equipment.
- Coat the ENTIRE structure:
 - roof
 - exterior walls
 - eaves
 - doors
 - windows
- Foam will eventually dissipate, reducing its ability to protect.



Gel:

Envelope your home in gel.

- Easy to apply, with minimal training and equipment.
- Coat the ENTIRE structure:
 - roof
 - exterior walls
 - eaves
 - doors
 - windows
- Gel will eventually dry, but will reactivate with small amount of water spray.

STAY AND DEFEND

“Stay and Defend” = “Risk your Life”

- Fire equipment vendors will teach you how to treat your home.
- **None** will recommend you stay behind to fight
- The *best* method is to treat your home, then *evacuate!*



Summary

- Wildland fires are extremely dangerous.
- Wildland fire behavior is very difficult to predict.
- Pre-treat a structure three ways:
 - Water (not recommended)
 - Foam (has sustainability)
 - Gel (has sustainability)
- After a structure is pre-treated, evacuate IMMEDIATELY. Once prepared and pre-treated, the site should be able to stand on its own.
- ***The “stay & defend” concept requires additional training, and is not an approved CERT activity.***

The CERT Wildland/Urban Interface Module

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