
CERT WILDLAND
URBAN INTERFACE – PART A
AWARENESS AND PREVENTION

In this unit you will:

- ✍ **Learn About The Wildland/Urban Interface Fire Problem:** How a fire in the WUI differs from fires within or around a home in urban environments.
- ✍ **Understand The Wildland Fire Environment:** What comprises the WUI and how fire travels.
- ✍ **Factors Influencing Wildfire Behavior:** What are the factors that affect a Wildland Fire?
- ✍ **Learn How To Prepare:** Preparation in advance of a Wildland Fire is the key to success.
- ✍ **Learn About Special Considerations:** Each neighborhood may present special circumstances that will require different preparation measures.

What is The Wildland Fire Problem?

The Wildland Fire Environment

California has one of the most severe wildland fire problems in the world because of:

- Population,
- Vegetation,
- Topography, and
- Climate

In wildland/urban interface areas, wildfire isn't a matter of "IF," it's a matter of "WHEN."

In California, thousands of people choose to build homes within or near wildland areas.

These areas are covered with flammable, native vegetation. The native vegetation in the WUI is some of the most explosive known to exist in the world. It is prone to fire, and some native species actually need fire involvement to thrive.

Then we make matters worse by introducing very flammable exotic trees, shrubs and plants into this mix.

However scientists have proven that wildfire has a natural role in the ecology of our area. Without fire, many species would not thrive. It is our role as a resident of this area to allow for the role of fire, but do it safely in a manner that does not endanger lives or threaten our properties.

This environment may be desirable for some, but it comes with consequences.

VEGETATION = FUEL

Local Conditions:

California's native plants and shrubs are among the most flammable in the world. Chemise, buckwheat and sage and others are referred to as *chaparral*.

Local hillsides and canyons are covered with these flammable plant materials. In mountain areas, forests with large meadows are predominant. Fire danger exists in this environment, as well.

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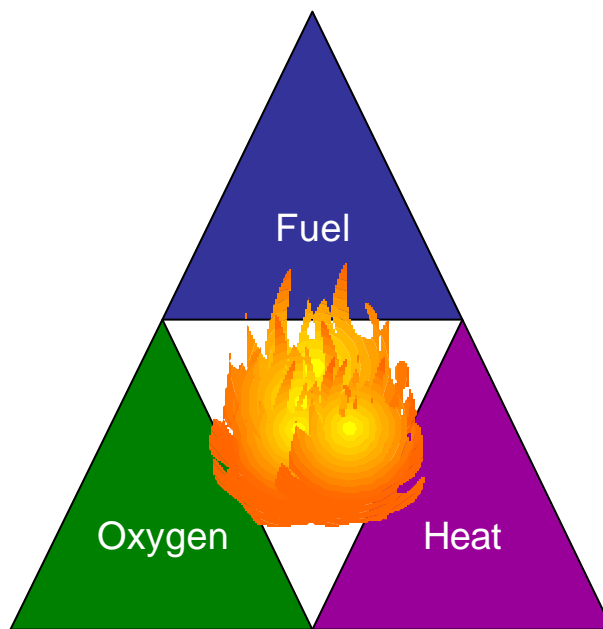
the role of fire, but do it safely in a manner that does not endanger lives or threaten our properties.

Obviously living in the WUI is not a threat if a fire does not start. Prevention of a fire is the key component of living in these areas.

How a Fire Burns:

The act of burning is COMBUSTION

Combustion is supported when fuel, heat and oxygen (air) combine in the just the right amounts.



Combustion is interrupted by...

- Removing the fuel, or
- Removing the oxygen, or
- Cooling the temperature of the fuel

Remove any one of them, the fuel, beforehand and the fire won't have a chance to start.

How a Fire Spreads

CONDUCTION, RADIATION AND CONVECTION:

Conduction:

- ? Slowest
- ? Transfer of heat by contact

Radiation:

- ? Transfer of heat by contact and through the air

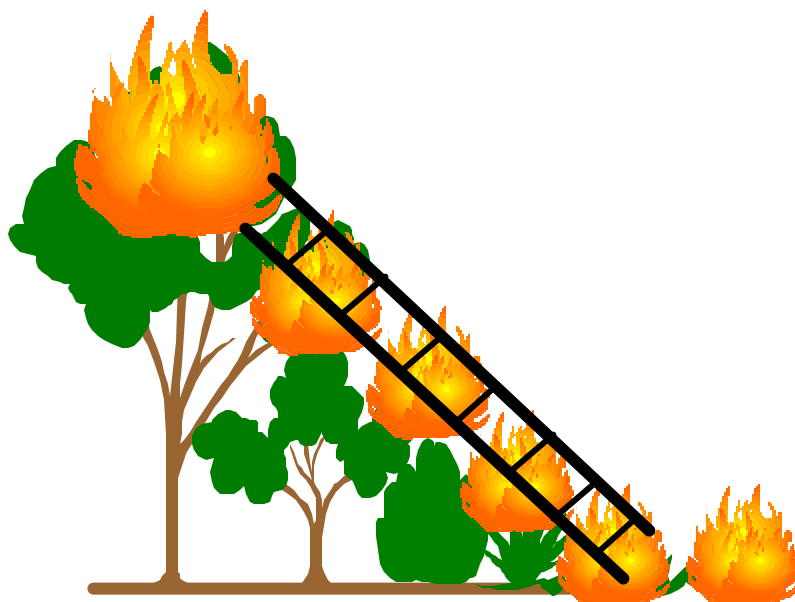
Convection:

- ? Fastest
- ? Transfer of heat by contact, through the air and by direction (rising)

Factors that influence ignition and fire spread:

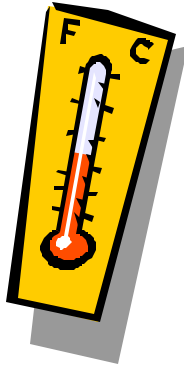
- ✍ Fuels
- ✍ Fuel moisture
- ✍ Fuel size
- ✍ Fuel continuity
- ✍ Vertical spacing
- ✍ Horizontal spacing

Spacing and Ladder Fuels: Fire will use tightly-spaced vegetation as a “ladder” to climb from surface plants and shrubs into aerial vegetation, like tree canopies.



Weather and Wildfire

Three fundamental parts of weather have a significant impact on wildfire:



Temperature



Relative Humidity



Wind

Temperature:

- Preheats fuels
- Preheats the ground
- Affects air currents
- Reduces firefighter endurance
- Reduces moisture in the air:
 - The higher the temperature, the lower the relative humidity

Relative Humidity:

- Water vapor in the air
- Expressed in a percentage
- Hot temperature equals reduced humidity
- Cool temperature equals increased humidity
- Higher humidity equals higher fuel moisture
- Fires usually burn more rapidly during the day due to lower humidity

Wind:

- Has the greatest influence on rate and direction of fire spread
- “Bends” flames close to fuel
- Generally: blows up-slope during day, blows down-slope at night
- Unpredictable

- Hazardous to firefighters

Topography

Topography is the configuration of land. Topography has significant affect on **RATE** and **DIRECTION** of fire spread.

The three fundamental parts of topography are slope, aspect and terrain.

SLOPE

- The steeper the slope, the faster the fire will move
- Slope influences fire by preheating fuels
- Wind currents usually flow uphill
- Convected heat causes a draft
- Burning material can roll downhill

ASPECT

Aspect is the direction a slope faces (N, S, E, W). Aspect affects the spread of fire.

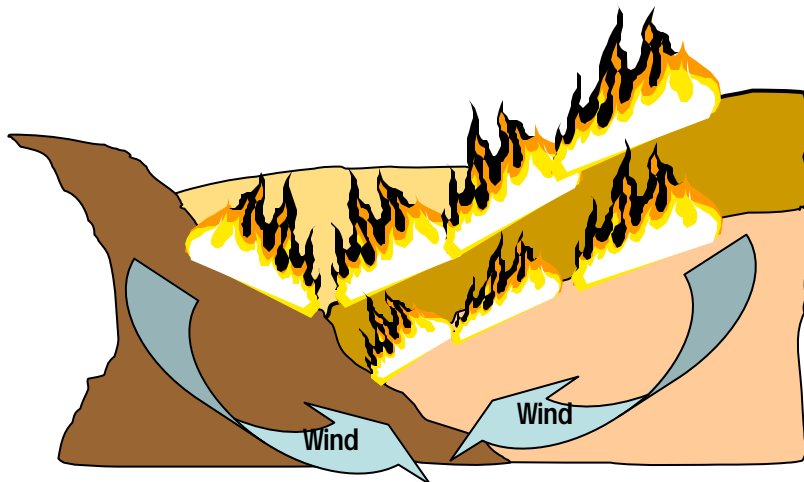
The Southern aspect:

- receives more direct radiation
- fuels are usually drier, but less dense
- receives a stronger slope wind

TERRAIN

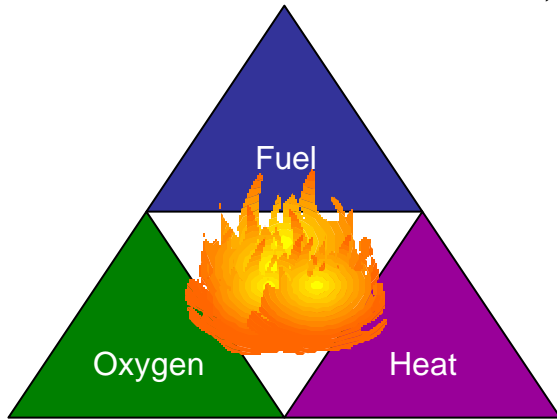
Terrain means; "the lay of the land"

- Obstructions include ridges & canyons
- Cause wind turbulence and erratic fire behavior
- Fires in canyons or steep drainages are **DANGER ZONES!**

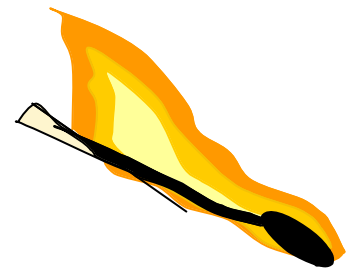


Summary:

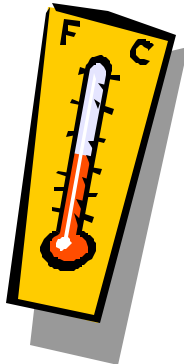
- The three elements of fire are *fuel, heat and oxygen*



- A fire spreads by *convection, radiation and conduction*



- Weather influences wildfire with *temperature, humidity and wind*



- *Slope, Aspect, and Terrain* are topographic elements that effect wildfire behavior

Fire in the Wildland Urban Interface

A Wildland Urban Interface fire is survivable. In order to survive you must be aware of how to prepare your home against fire if you live in a fire prone area.

Defensible Space and Zones

Defensible Space is an area surrounding structures that allows firefighters and equipment the space to defend against an approaching wildfire.



How much Defensible Space is needed depends upon three things

- ? Type of vegetation;
- ? Slope surrounding the home; and
- ? Setbacks that are approved in your community.

The Zones:

- Zone 1 – Primary space adjacent to your home
- Zone 2 – Secondary Buffer zone

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Zone 3 – Outer fuel transition
Zone 4 – Outer limits (on a slope)



Zone 1 – Primary space adjacent to your home

Zone 2 – Secondary Buffer zone

Zone 3 – Outer fuel transition

Zone 4 – Outer limits (on a slope)

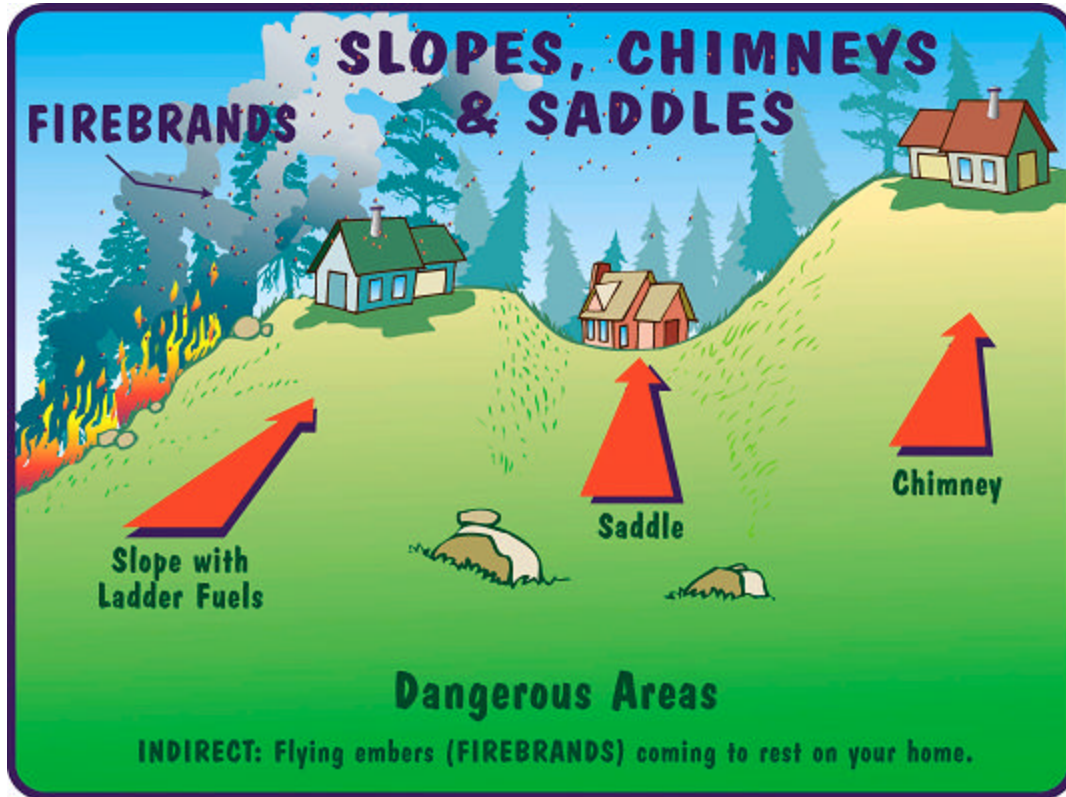
The “Small Things”



Your home has many vulnerable spots. Check each of these to make sure that they are in good repair, that there are no cracks or other openings developing. Wood roofs are a tremendous hazard.

- ? CHIMNEY
- ? DECK
- ? WINDOWS
- ? SIDING
- ? GUTTERS

? ROOF



The location of your home has an important role in how vulnerable your home is to a wildfire.

Slope

Saddle

Chimney

Numbers consistent w/local standards 4 inch minimum.

Access

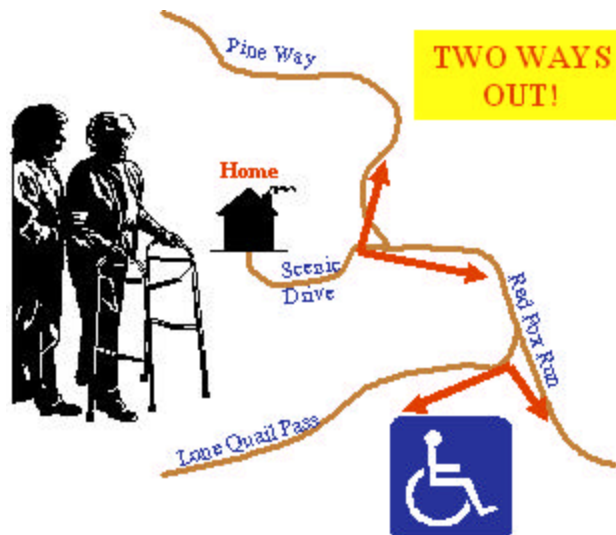
Fire department access is extremely important and often overlooked.

- Driveways and other access roads must meet or exceed your fire department's needs.
- Display address with 4" high numerals on a contrasting background.
- Visible street signs that are clearly and appropriately marked
- Keep roadways free from overhanging vegetation, fence posts or signage.
- "Vertical Clearance" is a must. What is the requirement in your community?
- Driveway/road surface and weight requirements.
- *Minimum* 16-foot wide driveway/access road is needed.

- May need a wider road if a number of homes are served – allowing for two way traffic (access & egress).

Special Considerations

- Evacuation routes
- Plan special-needs evacuations ahead of time.
- Livestock and pet evacuations
- “Safe” areas – Safe Zones – discussed in next unit.



Summary

To prepare for the impacts of wildfires, continue to:

- Identify your local wildland fire problem,
- Monitor your local wildland environment,
- Make your home defensible against wildfire, and

- **Plan for any special considerations for evacuation in your neighborhood**

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