



2022 Routt County Wildfire Mitigation Conference Home Ignition Zone Summary Presentation

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Colorado State Forest Service (CSFS)



The mission of the Colorado State Forest Service is to achieve stewardship of Colorado's diverse forest environments for the benefit of present and future generations.





FIRE OVERVIEW

Fundamentals...

Fire Triangle



✓ Fuel

✓ Heat



✓ Oxygen

Fire Behavior Triangle



✓ Topography

✓ Weather



✓ Fuel

Fuels

- *The only fire behavior variable we (homeowners, land managers) can control!*
- Fundamental to managing fire
- Fundamental to understanding how to prevent damage to our values at risk
 - “If it doesn’t ignite, it doesn’t burn” Dr. Jack Cohen

Leading Causes of Home Ignition



- **Embers (firebrands)**

- Windborne
- Long travel distances
- Most common, least predictable
- Greatest vulnerability!

- **Surface fire**

- Very preventable



Source: nationalgeographic.com



Source: greenbiz.com

Additional Cause of Home Ignition:

- Radiant heat



- Adjacent crown fire
- Structure to structure ignition (urban conflagration)



Source: NFPA

Home Ignition Zone (HIZ)

- What is it and why does it matter?

Home Ignition Zone

- *The home and everything surrounding it, natural and built*
- Two primary determinants of home ignition
 1. Structural Ignitability
 2. Defensible Space

Home Ignition Zone

- This concept was developed in the late 1990's by the now-retired USFS fire scientist, Jack Cohen
 - Physical experiments measuring studying radiant heat's impact on materials (structures)
 - “If it doesn't ignite, it doesn't burn.”
- Consistently reinforced by additional experiments, models, and an increasing number of post-fire studies across the country

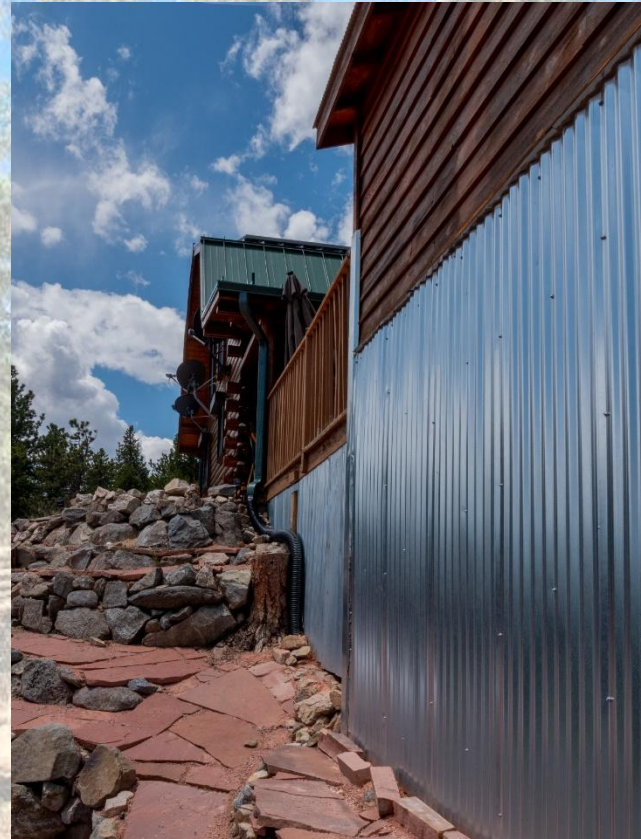
Home Ignition Zone



- Defensible Space
- Structural Ignitability



Source: CSFS



Source: Boulder County Wildfire Partners

Home Hardening



- Modification of a home or structure to minimize damage/loss from any type of wildfire influence
 - AKA. Reducing structural ignitability



Source: Boulder County Wildfire Partners

Home Hardening Activities



- Ensure the roof has a Class A fire rating
- Remove all leaves, needles, and other debris from all decks, roofs, and gutters
- Screen attic, roof, eave and foundation vents with 1/8 inch metal mesh
- Screen or wall-in stilt foundations and decks with 1/8 inch metal mesh.
- Use tempered glass for windows, 2 or more panes are best
- Create 6 inches of vertical clearance between the ground and home siding
- Replace combustible deck or fencing material adjacent to the home....



Source: Boulder County Wildfire Partners

Home Hardening Activities



- The list goes on...
- Every action helps
- Anything done to harden the home reduces the chance for damage/loss
 - "If it doesn't ignite, it doesn't burn"

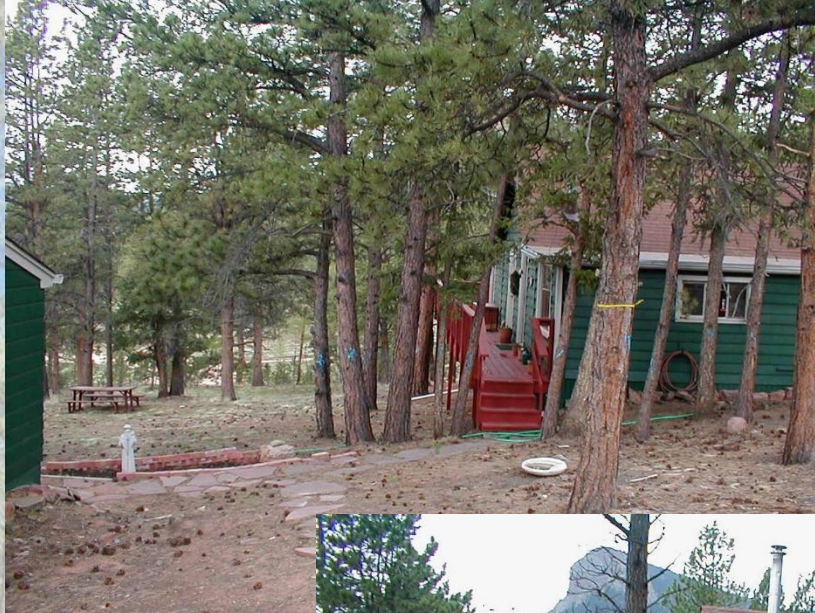


Source: Boulder County Wildfire Partners

Defensible Space (D-space)



- The area surrounding a home/structure where fuels have been modified to reduce fire behavior/intensity (generally up to 100')



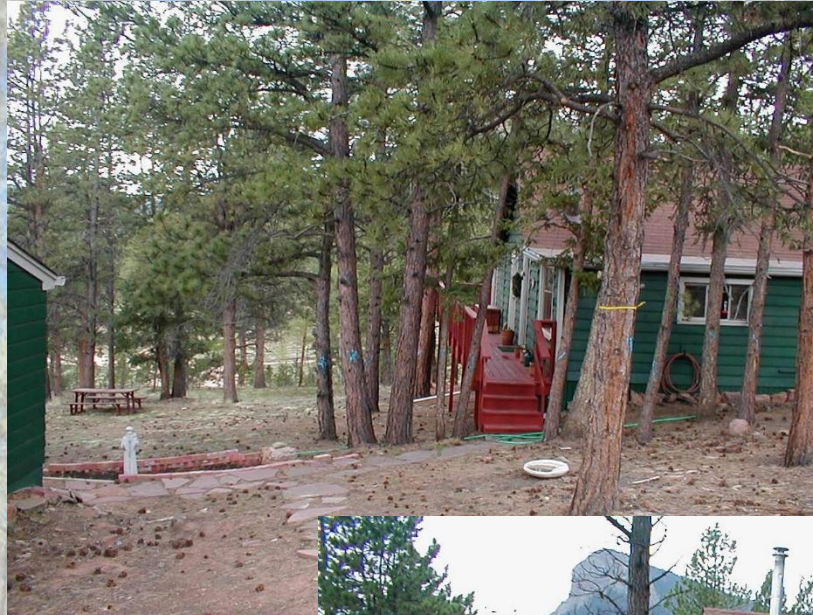
Source: CSFS



Defensible Space



- Reduced fire behavior leads to:
 1. Less local spotting
 - Produce/Receive
 2. Less overall heat impact
 3. Greater opportunity for direct engagement success*



Source: CSFS



Defensible Space



- The term **IS NOT** meant to imply that fire resources will be present to defend a structure
- It should be thought of as a means of minimizing fire behavior so the home can defend itself (stand alone)



Source: CO-ARF-CLRD | Dowdy Lake Rx | 2007

Defensible Space



- The root purpose of creating defensible space is to do essentially the same thing that wildland firefighters do
 - separate and reduce fuels
 - keep fire from spreading



Source: CO-ARF-CLRD/Dowdy Lake Rx/2007

Defensible Space



- Zone 1 (0-5' from structure)
 - Non-combustible area
 - Linkage between structure and rest of property
 - Most important zone to take immediate action



Source: Boulder County Wildfire Partners

Defensible Space



- Zone 2 (5-30' from structure)
 - Discontinuous fuels!
 - 10' minimum spacing between tree crowns
 - Separate shrub clumps
 - Eliminate ladder fuels
 - Mow grass $\leq 4''$
 - *Next presentation...*



Source: Boulder County Wildfire Partners

Defensible Space



- Zone 3 (30-100' from structure)
 - Avoid large concentrations of slash/debris
 - Eliminate ladder fuels
 - Manage for diversity and health



Source: Boulder County Wildfire Partners
Cold Springs Fire | 2016



Source: Boulder County
Wildfire Partners

So much to do...

WHERE TO BEGIN?

Start at the home...



Source: Boulder County Wildfire Partners

Workshop – 15 min



Each table has workshop questionnaires for you to answer as individuals and compare notes with your group.

We'll do a recap after you have worked through some of the questions.

Start at the home RECAP...



Source: Boulder County Wildfire Partners

Roof...



- Rated
- Surface & gutters free of debris



Source: NFPA

Vent Screens...



- Attic, roof, crawlspace, etc.
- 1/8" or finer

Source: Boulder County Wildfire Partners

Deck...



- Do not store materials below
- Regularly remove debris



Source: National Fire Protection Association®

D-space...



- Prioritize Zone 1
- Then move outward...



Source: Boulder County Wildfire Partners



Source: Boulder County
Wildfire Partners

When does it end?

MAINTENANCE IS CRITICAL!

Conclusion



- Our knowledge base is significant
- There are actions every homeowner can take to improve wildfire outcomes, ***the time to act is now***
- Collaboration and community involvement is critical
- Resources are abundant
- Help is available



Burro Fire | CO-SJF | 2018

Resources

- [Harden Your Home video](#) (National Interagency Fire Center [NIFC])
- [The Home Ignition Zone \(CSFS\)](#)
- [CSFS Wildfire Mitigation webpage](#)
- [CSFS Forest Atlas](#) (Information portal & wildfire risk viewer)
- [Cold Springs Wildfire Success Story/Case Study](#) (Boulder County Wildfire Partners)
- [NFPA Wildfire Resources](#)
- [Wildfire Research Fact Sheets](#) (NFPA & IBHS)
- [Wildfire Ready](#) (IBHS)
- [Wildfire Retrofit Guide – Rocky Mountain Region](#) (IBHS, IAFC, NFPA)
- [Fire Adapted Colorado \(FACO\)](#)
- [Fire Adapted Communities Learning Network \(FAC Net\)](#)



Questions?

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