

# Trees and Zone 0

**Yana Valachovic**

- **County Director: Humboldt and Del Norte Counties**
- **Forest Advisor**
- **Fire Network- Community Resiliency and Built Environment**
- **Lead of Northern California Fire Science Consortium**



Surviving houses next to destroyed houses in the Palisades and Eaton Fire footprint

May 12, 2025

Board of Forestry and Fire Protection Zone 0 Committee



CALIFORNIA  
FIRE SCIENCE  
CONSORTIUM



UC  
CE

UNIVERSITY OF CALIFORNIA  
Agriculture and Natural Resources

Cooperative Extension



Today's talk discusses real communities; my heart goes out to all affected.



Photo: Yana Valachovic



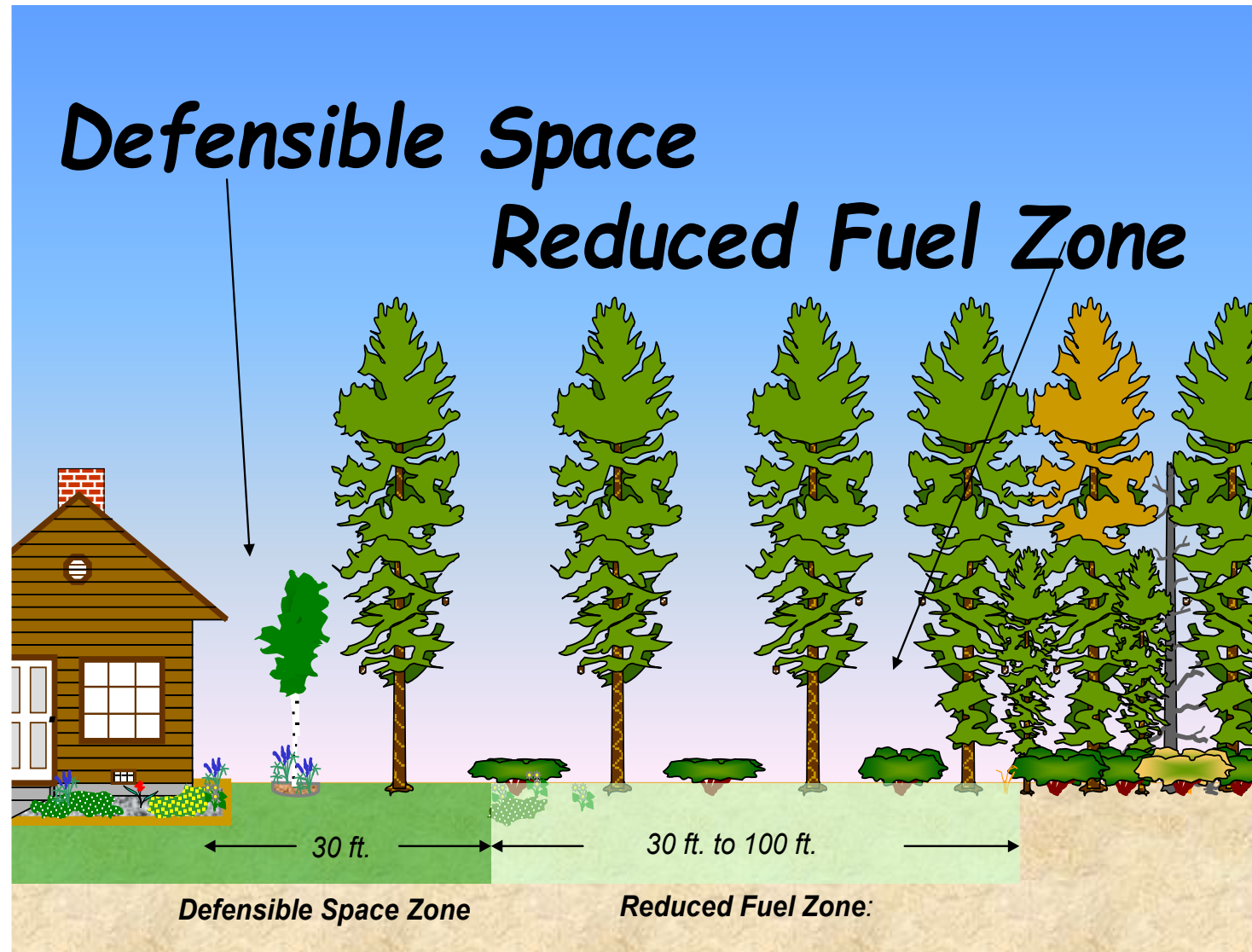
# Post-fire, trees tell where the wind came from



Photo: Yana Valachovic

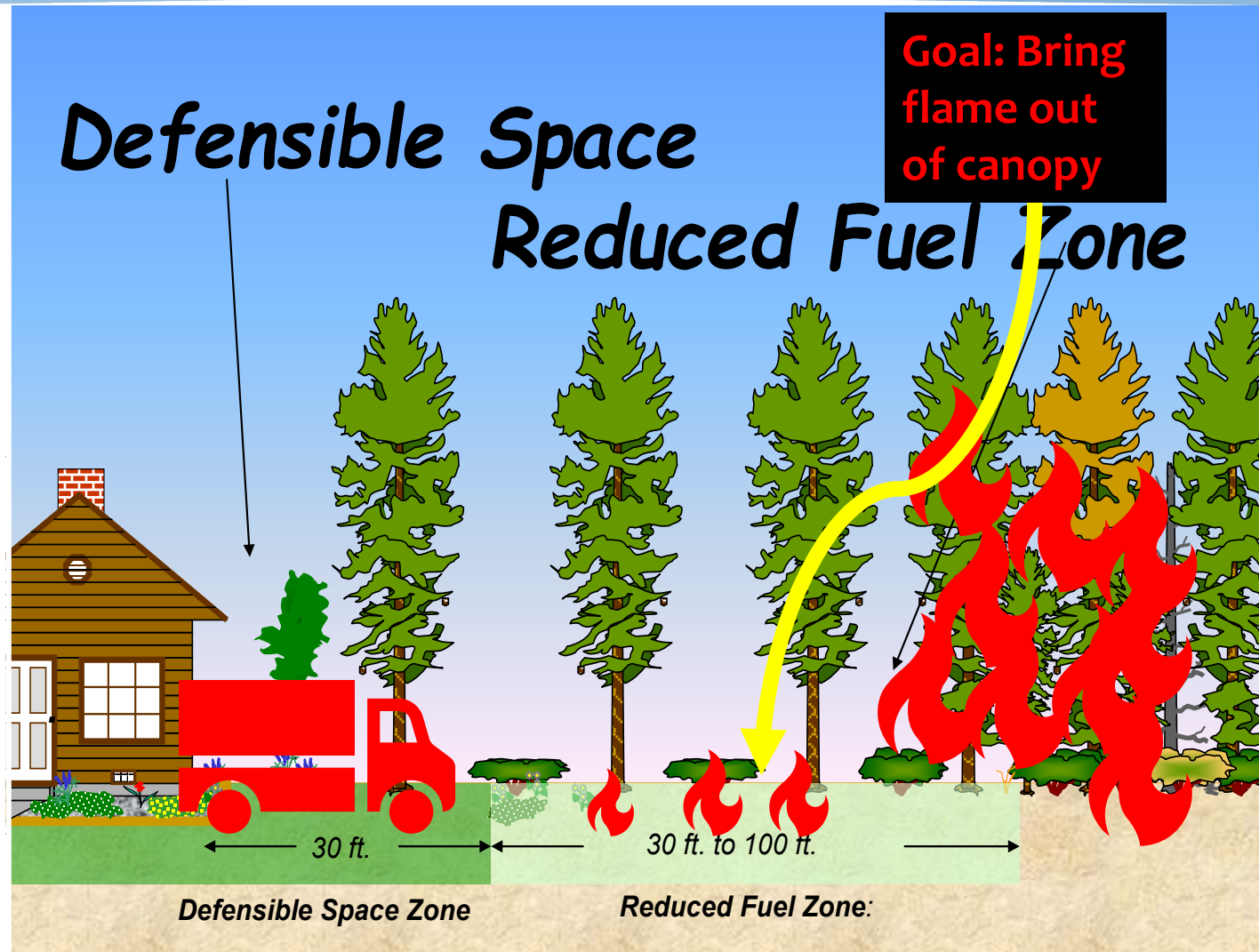


# Wildfire mitigation is evolving- 2006 visualization





# Defensible space guidance has been about creating a defendable space



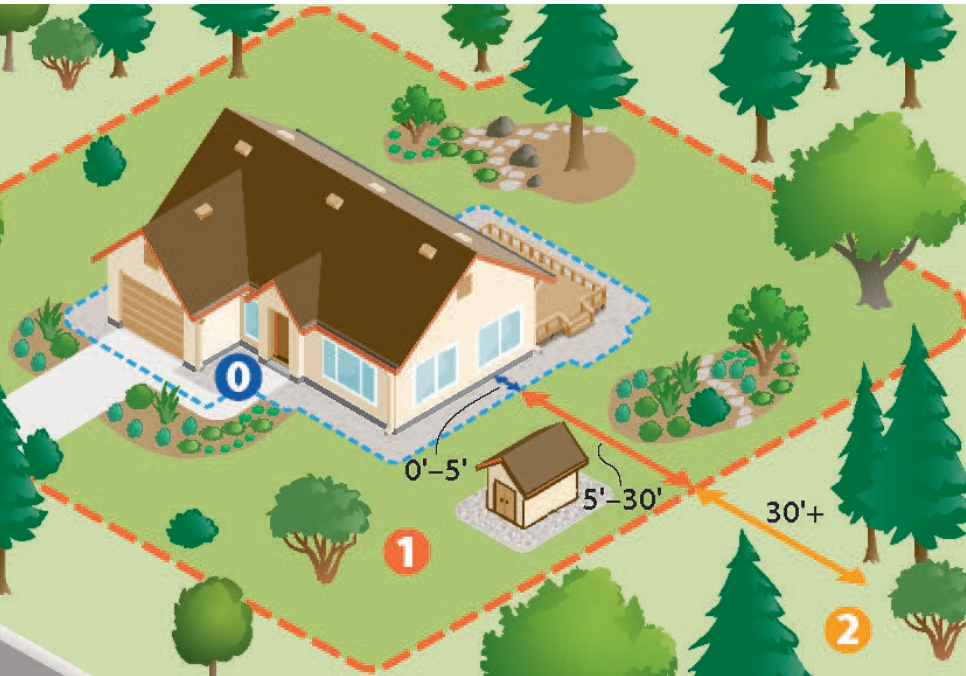


**Embers swirl in the wind as a Paradise fast-food restaurant burns in the Camp Fire.** (Justin Sullivan / Getty Images)





# Purpose- Zone 0



Zone 0 is the 0-5' perimeter of the building and attached decks

Zone 0 reduces the likelihood of **structure ignition** by reducing the potential for **direct ignition of the structure from flame contact**, by **embers that accumulate at the base of a wall**, and/or indirect ignitions when **embers ignite vegetation, vegetative debris or other combustible materials located close to the structure that result in either a radiant heat and/or a direct flame contact exposure to the structure.**

Zone 0 is the **horizontal area within the first five feet around the structure and any outbuildings and attached decks, and stairs.** The zone also includes the **area under attached decks and stair landings.** To be most effective, the zone should incorporate a **6-inch vertical area** between the ground and the start of the building's exterior siding. *(Note: the appropriate vertical height would be dependent on whether combustibles are retained in Zone 0 and coupled with Chapter 7A requirements. The Office of the State Fire Marshal is the regulatory authority for this vertical zone since this zone would be part of the built environment.)*

Zone 0 is a critical component of structure defense and, when coupled with Zones 1 and Zone 2, is essential to defensible space.

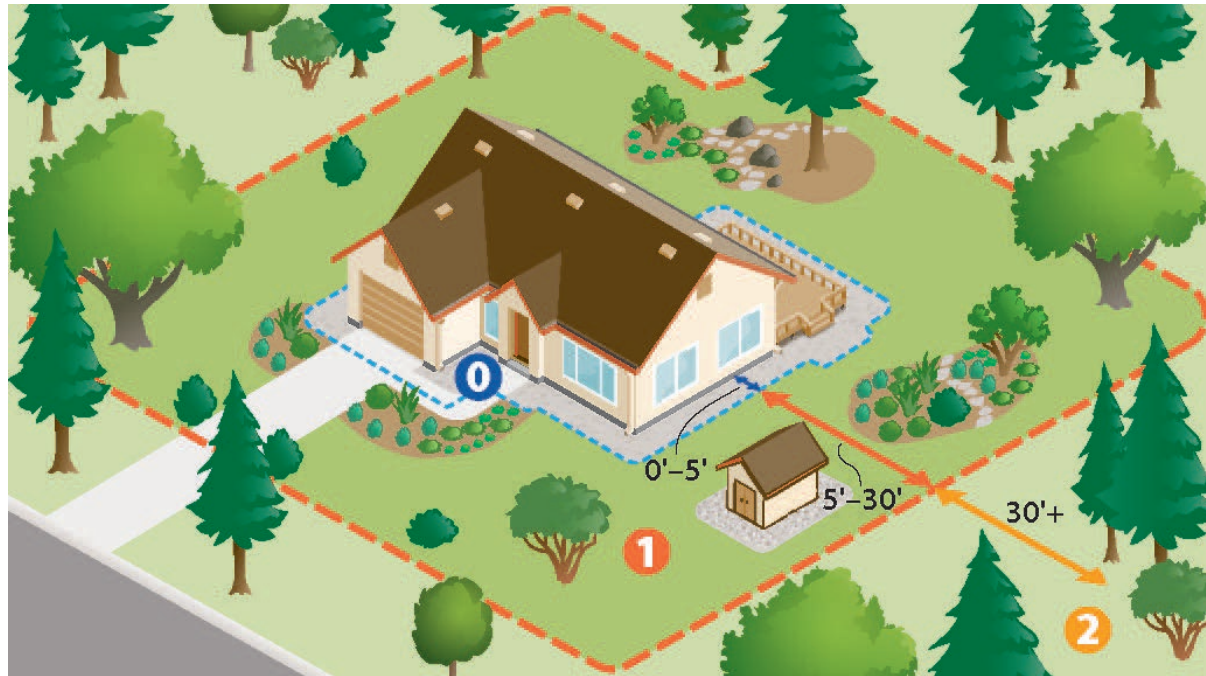


# Purpose- Zone 1

**Zone 1 reduces the likelihood of fire burning directly to the structure.**

This is accomplished by modifying fuels and creating a discontinuity between planting groups that limits the pathways for fire to burn to the structure and reduces the potential for near-to-building ember generation and radiant heat exposures.

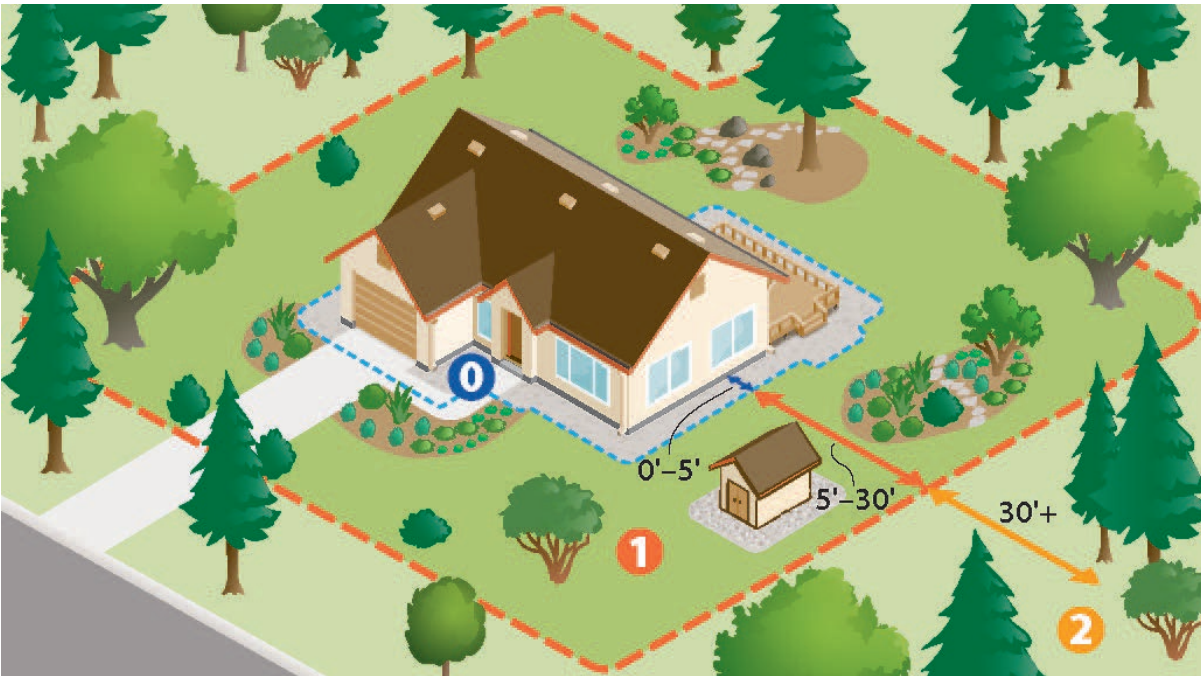
An additional purpose of this zone is to provide a **defendable zone** for fire personnel to stage and take direct action



Zone 1 is the 5-30' perimeter of the building and attached decks



# Purpose- Zone 2



**Zone 2** is the 30-100' perimeter of the building and attached decks, or to the edge of the property line

**Zone 2** actions are designed to reduce the potential behavior of an oncoming fire in such a way as to drop an approaching fire from the crown to the ground.

Fuel modification includes removing dead vegetation and reducing living vegetation to **eliminate fuel ladders and create vegetation separation** between individual or islands of trees or shrubs.

These vegetation modification requirements are more significant for those properties with **steeper terrain, larger and denser fuels, highly volatile fuels, and areas subject to frequent fires.**

Additional **benefits** of the Zone 2 include facilitating direct defense actions, improving the function of Zones 0 and 1 by reducing the flame heights, and the potential for ember generation and radiant heat exposure to structures.



# Ranch Fire- embers through trees



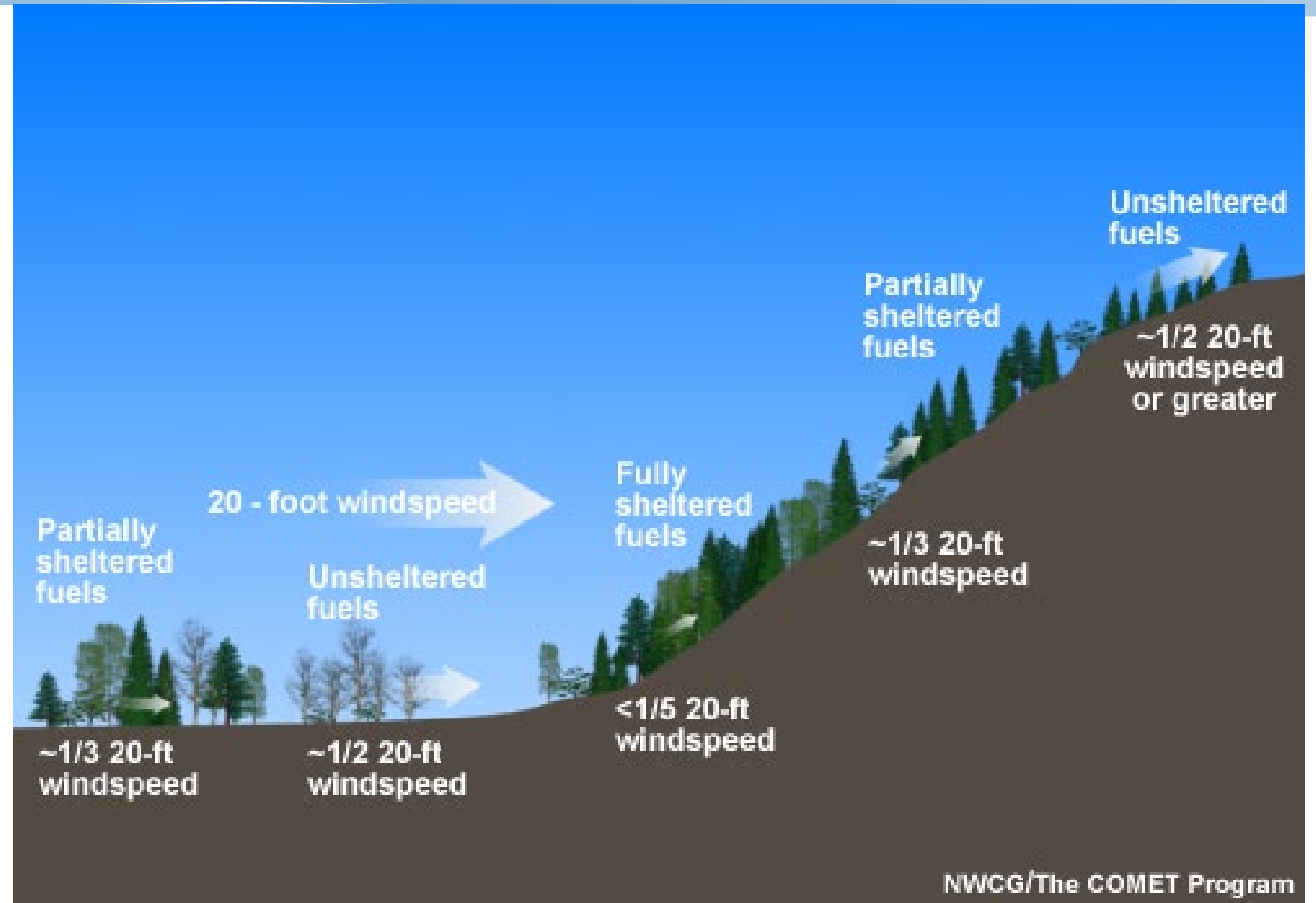
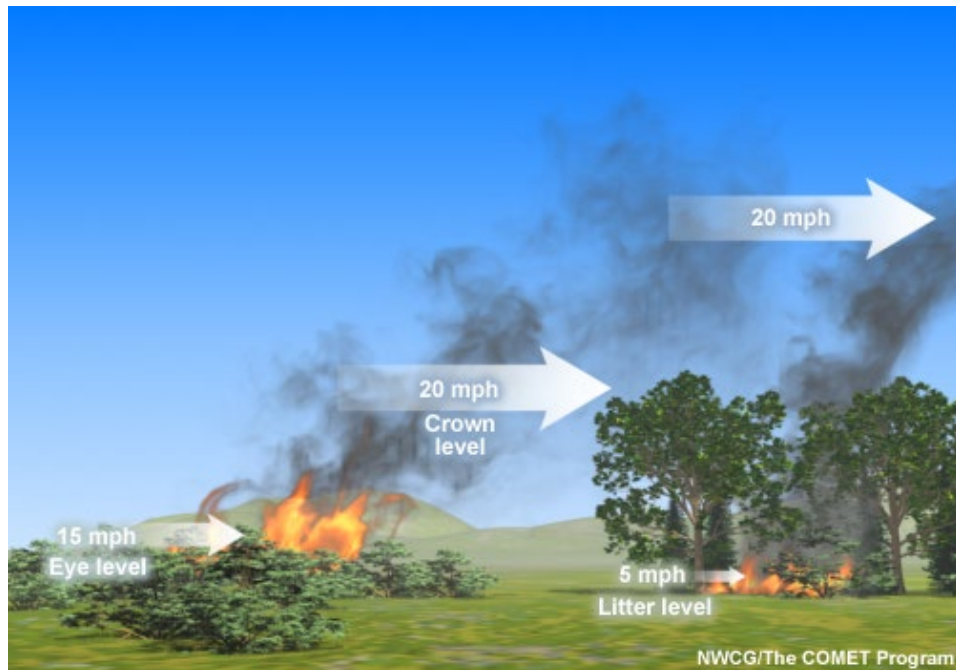
This video contains material that may trigger past traumas for some viewers.





# Trees, wind, sheltering

Trees create roughness, provide some shelter, but the thickness of the forest and the slope are important.





# Ladder fuels



Photo: Henri Holbrook



# No ladder fuels = no crown fire



Photo: Henri Holbrook



Photo: Ryan Tompkins

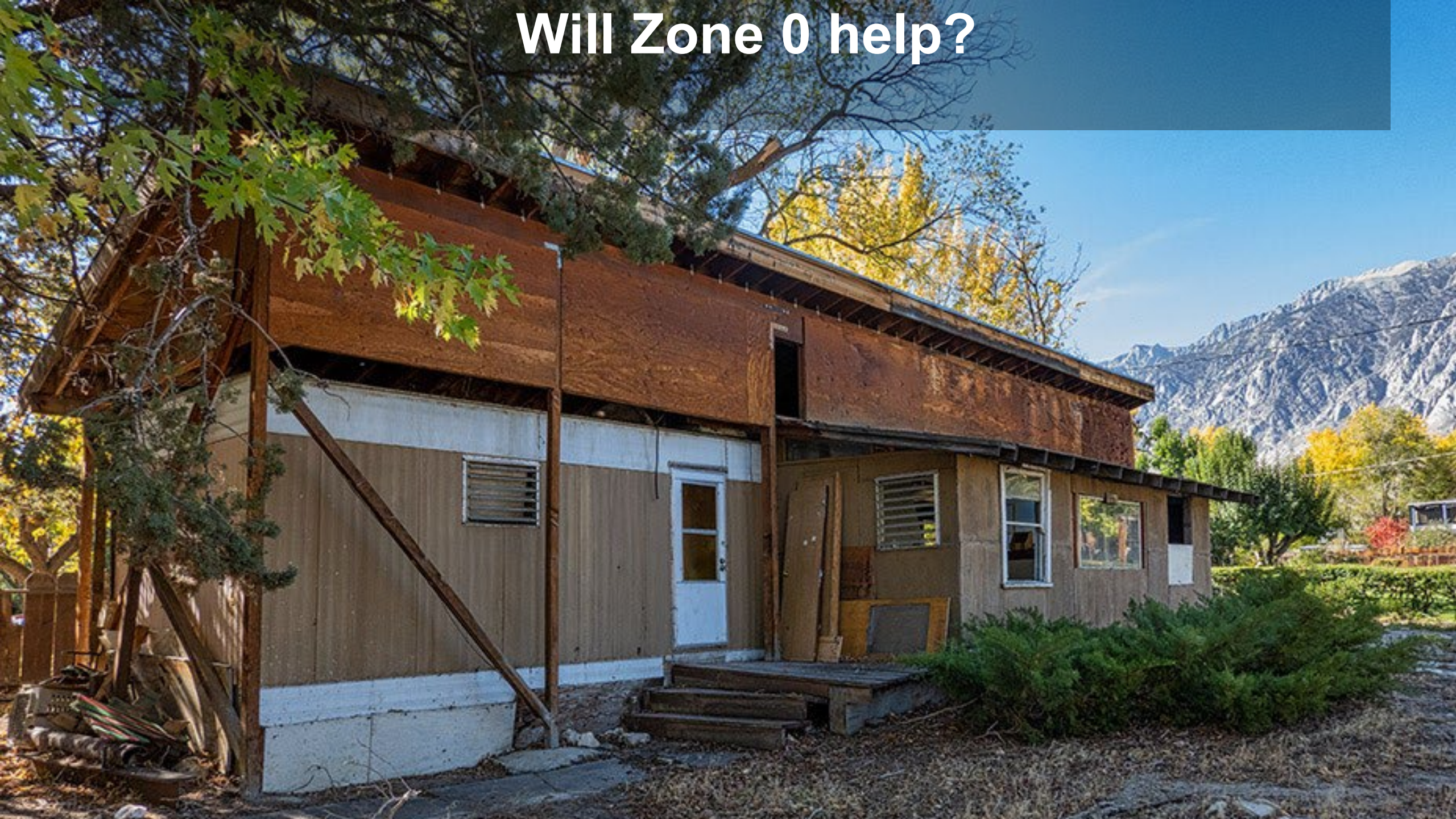


**Will Zone 0 help?**





**Will Zone 0 help?**







Source: Santa Cruz FSC





Source: Yana Valachovic







# Zone 0 (0-5ft): Ideas

Source: Mendocino FSC





# CSAA and UC Berkeley Landscape Architecture 2024 Competition

Key Design Interventions for Fire Resistance





# Will Zone 0 help?



Source: Mendocino FSC