

Wildland Fire: Behaving Badly

or

Everything We Can Do, Fire Can Do Better. **So There!**

Grow Green Landscape Professional Training:

Firewise Landscaping

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Ladybird Johnson Wildflower Center

Glen Gillman

Environmental Program Coordinator

Austin Fire Department



FIRE!

Fire...

...is normal and natural

...likely occurred frequently

...likely occurred with variable intensities

Fire Behavior



Topography

- Flat or slopes
- Aspect



Weather

- Wind
- Temperature
- Relative Humidity
- Precipitation

Fuel

- Fine or Heavy
- Arrangement & continuity
- Fuel Moisture

Fuel Types

- Grass (includes turf grass and savannas)
- Shrub
- Timber Litter
- Slash

Defined by the vegetation carrying the fire



Grass Fuel Type

Rate of Spread 5-7 miles/hr

Flame length 15-30 feet



Shrub Fuel Type

Rate of Spread 0.5-2 miles/hr

Flame length 14-16 feet



Timber Litter Fuel Type

Rate of Spread 0.1-0.8 miles/hr

Flame Length 2-8 feet



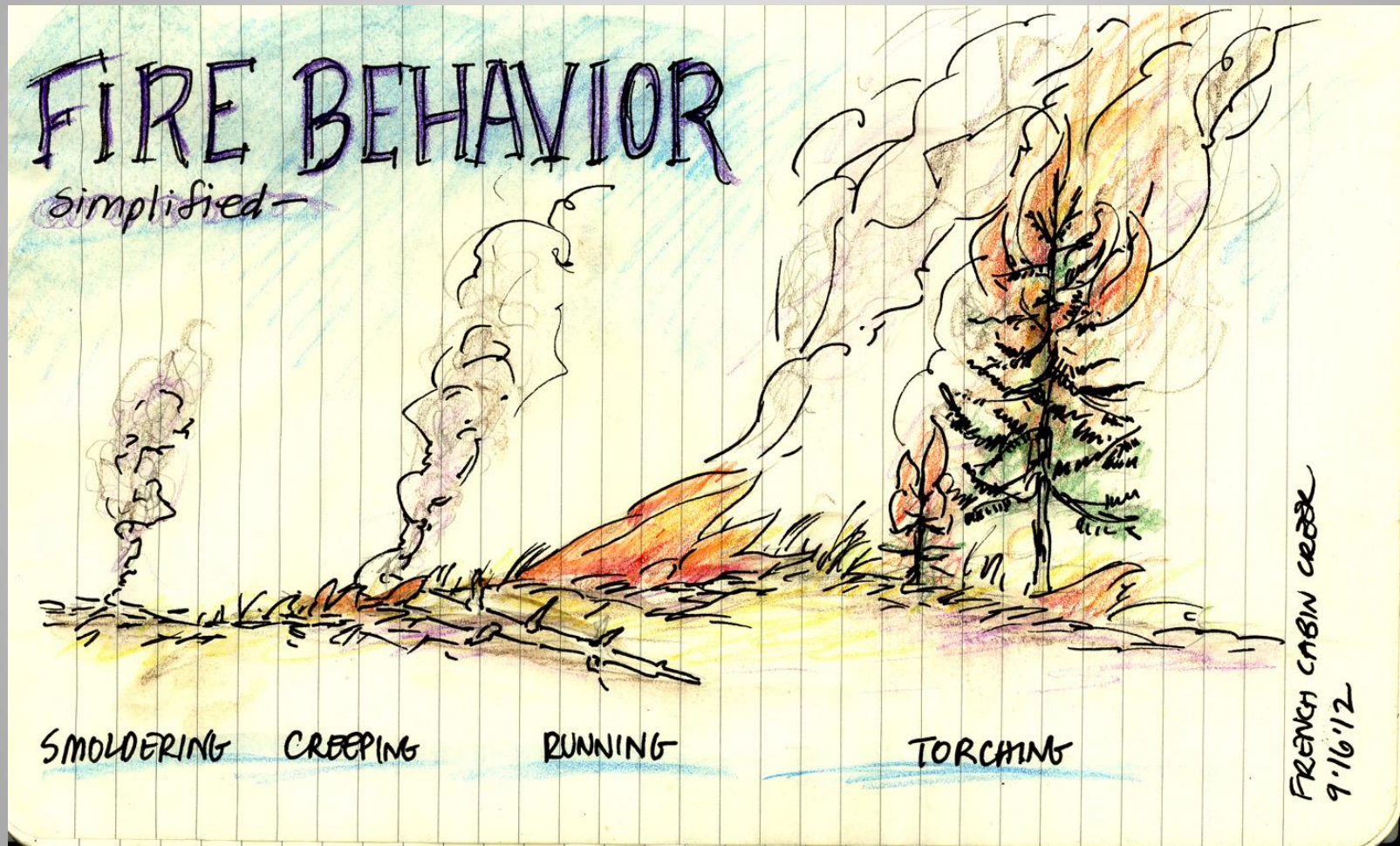
Slash Fuel Type

Rate of Spread 0.3-0.8 miles/hr

Flame Length 7-20 feet



Fire Types



Notes from Fire Effects Monitor, Source Unknown

Generalized Fuel Type Comparison

Fuel Type	Intensity	Frequency	Resiliency	Problem Fire Behavior
Grass	Moderate	High	High	Moderate
Shrub	High	Low	Low	High
Timber Litter	Low	Low	Moderate	Low
Slash	High	Moderate	Low	High

Grasslands, specifically low stature grasslands and savannas, and hardwood woodlands are the preferred vegetation communities near high-value resources

Fire spreads as a continually propagating process, not as a moving mass. Unlike a flash flood or an avalanche where a mass engulfs objects in its path, fire spreads because the locations along the path meet the requirements for combustion.

A wildland fire does not spread to homes unless the homes meet the fuel and heat requirements sufficient for ignition and continued combustion.

What is the Wildland Fire Threat to Homes?
Presented as the Thompson Memorial Lecture, April 10, 2000
School of Forestry, Northern Arizona University, Flagstaff, AZ
Jack D. Cohen

The Home Ignition Zone



The home it's surroundings out to 100 to 200 feet.

Landscape Professional	Wildland Firefighter
Mow grass	Reduce 1-hour fuel loads by 100%
Fertilize	Burn 90% of area
Remove old growth on perennials	Reduce 1-hour fuel loads by 100%
Plant Annuals	Encourage growth of forbs
Prune Shrubs	Top-kill 50-75% of woody deciduous shrubs under 3" in diameter
Remove lower limbs on trees	Scorch 75% of woody plants over 3" in diameter up to 6 foot
Remove newly established plants	Kill 25-50% of ashe juniper under 3" in diameter.
Prune trees to maintain tree health	Limit overstory tree mortality to less than 10%.
Plant treeserr....

BEHAVING BADLY?



Fire Proofing in 3 Easy Steps

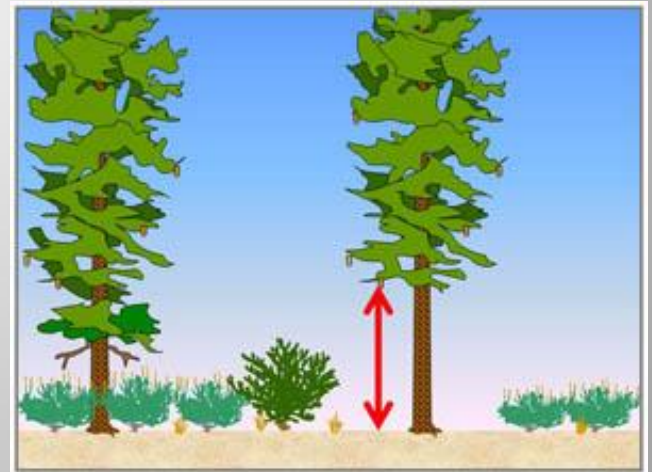
1. Surface Fire

Reduce fine fuels to reduce surface fire intensity



2. Transition to Crown Fire

Remove ladder fuels to reduce ability of surface fire to ignite canopy fuels



Fire Proofing in 3 Easy Steps

3. Fuel Continuity

Reduce fuel continuity to contain or exclude the movement of the fire

■ Surface Fuels

- Man-made Barriers
- Natural Barriers

■ Canopy Fuels

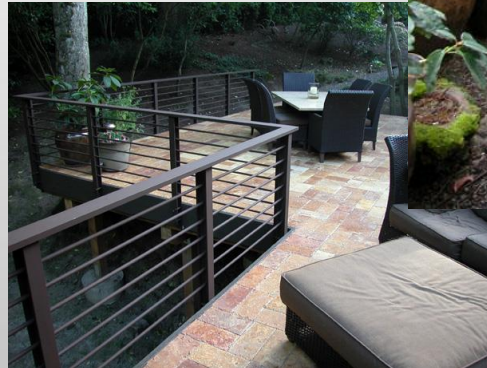
- Canopy Gaps
- Canopy Species Diversity
- Canopy Size Class Diversity



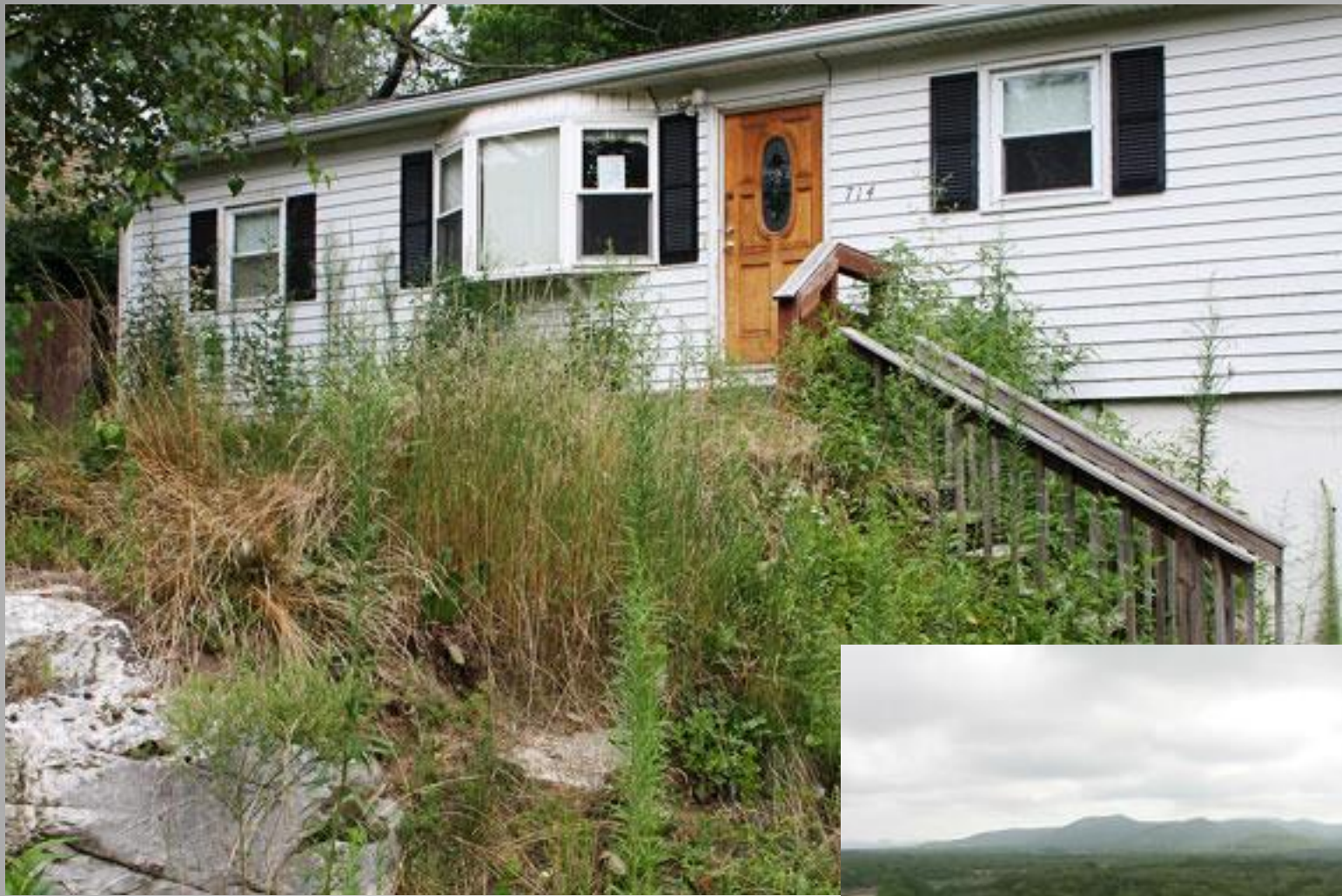
Fences



Decks



**DO NOT CUT
MATERIAL UNTIL YOU
HAVE A PLAN TO
DISPOSE OF IT!**



Stochastic Events



Spicewood Fire 2011



Steiner Ranch Fire 2011



Halloween Floods 2013



