

Tree Mortality

Sierra National Forest

Bass Lake Ranger District

Beetle Killed Pine Trees



Forest Flammability

- Forests with large number of beetle-killed trees are at a significantly higher risk of burning as actively spreading crown fires.
- Crown fires cannot be directly suppressed by ground resources, and are very dangerous to firefighters and communities.
- *Jolly, Matt et al 2012.*



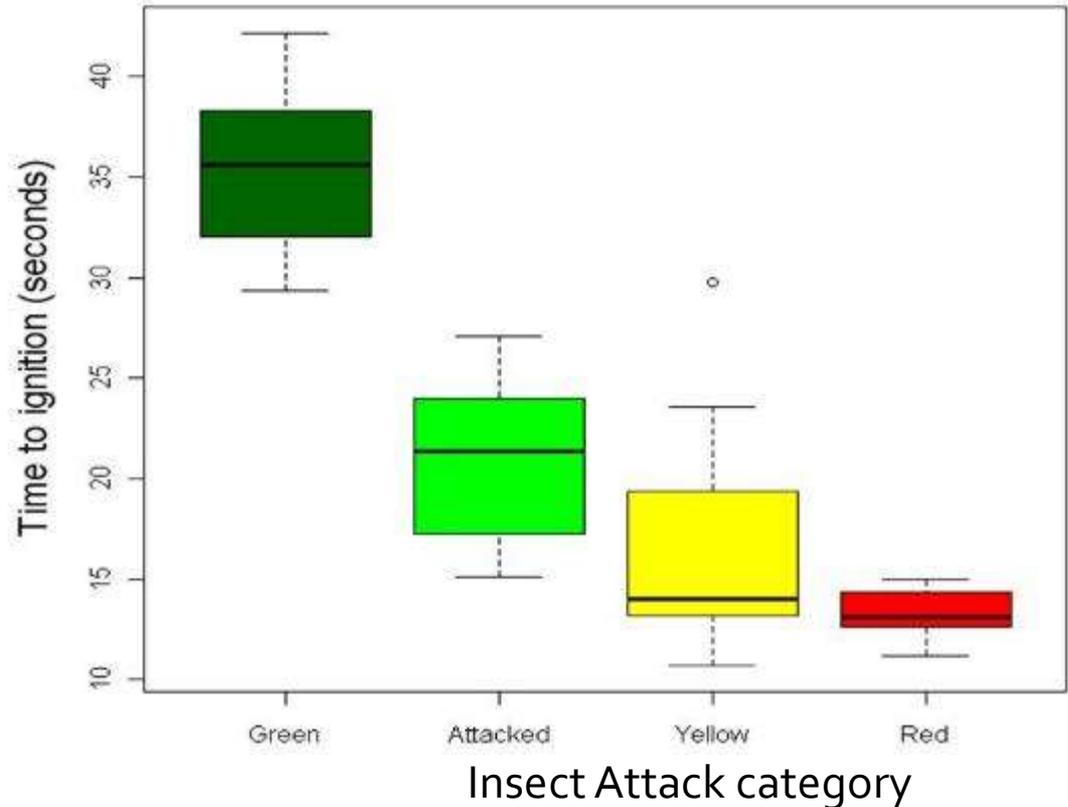
Courtney Fire 2014

Forest Flammability

Red needle stage of tree mortality is the most flammable .

- Fuel moisture reduced to less than **10%** compared to 90-120% for live green needles.
- Less intense surface fire would ignite dead canopy fuels 3 times faster.

AVERAGE TIME TO IGNITION BY ATTACK CATEGORY



Forest Flammability

Lodgepole Pine Forests in Colorado

- Notice the lack of heavy shrubs and ladder fuels in the understory.
- Shorter needles of lighter density than Ponderosa Pine.



Forest Flammability

Ponderosa Pine Forest in California

- Notice heavy shrubs and incense cedar ladder fuels in the understory.
- Longer needles and more dense canopy.



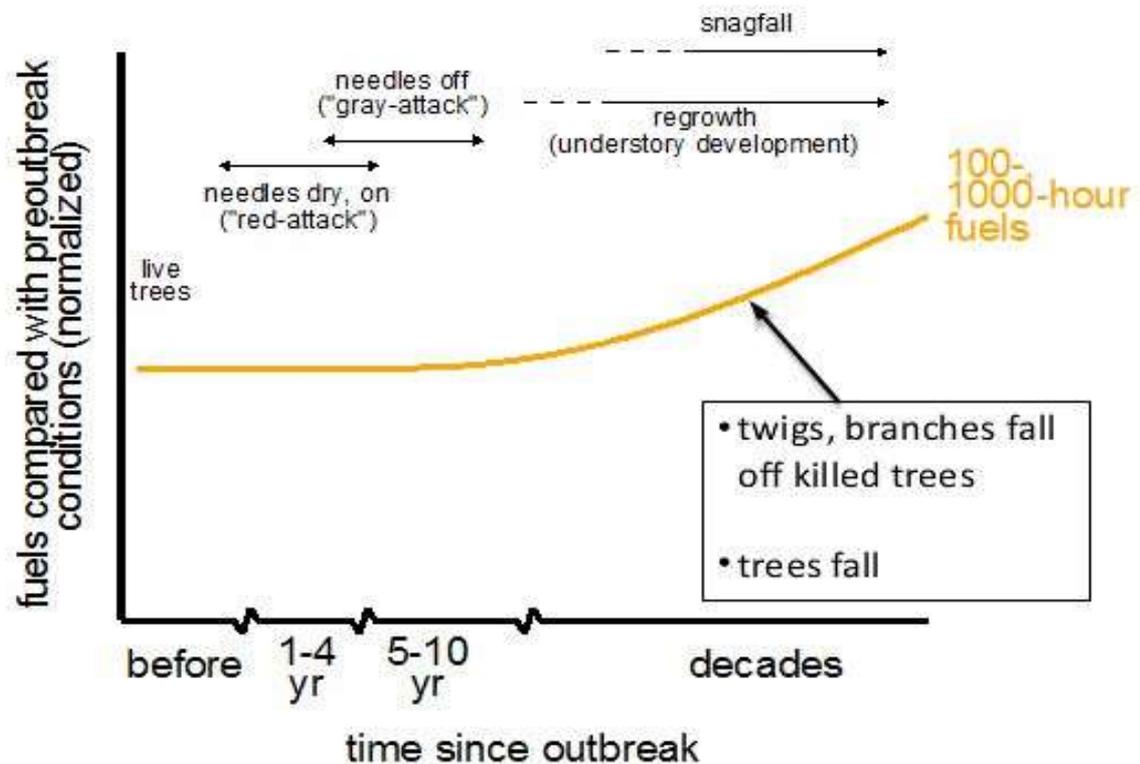
Forest Flammability

Long term fuels buildup

- Tree fall will begin to occur within 3-5 years.
- What is the unique weather feature that occurs on the Bass Lake RD? "Mono Winds"

Expected fuel patterns

Coarse fuels: dead woody fuels >1" diameter (surface)



Forest Flammability

Long term fuels buildup

- Heavy surface fuel loading 100 + tons per acre that will persist for decades.



Fire Fighter Safety

- Snags increase the risk of injury in a already dangerous working environment.



Sierra National Forest Priorities

What is a Hazard Tree?

Hazard Tree =
Defective Tree +
Target Within Range



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Hazard Zone 1.5 tree Heights

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What is a target?



People

Buildings



Facilities

Vehicles &
Equipment



- Tent Sites
- Parking Pads
- Trails to Facilities
- Picnic Tables
- Resting Benches

Treatment Strategies

- **MOVE** the target
- **CORRECT** the tree
- **REMOVE** the tree
- **CLOSE** the area

Life and Property



Forest Service Structures and Recreational Facilities



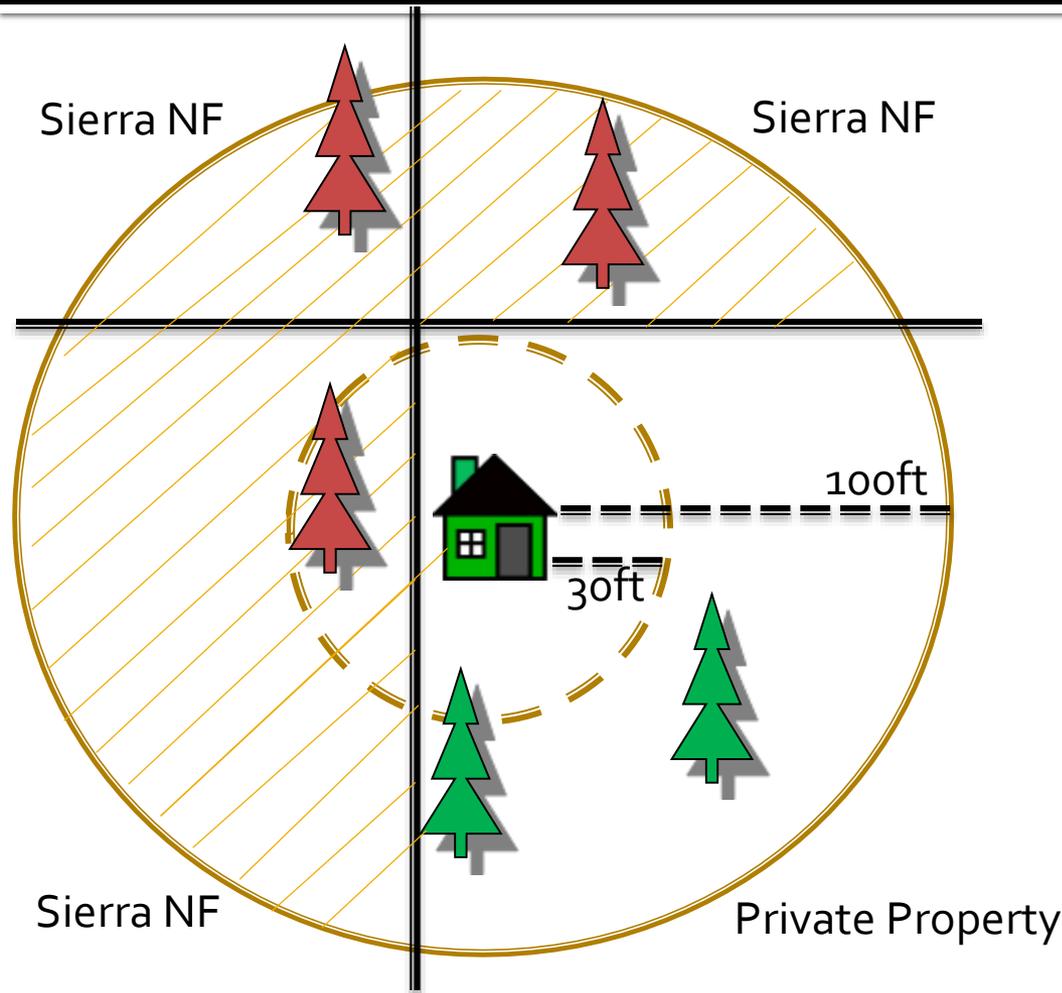
Trailheads



Forest Roads



Clearance Standards Considerations



- Free use permit
 - No wheeled/tracked equipment
 - Limb and top trees
 - No piling on FS lands
 - lop and scatter w/in 18" of ground all tree limbs/tops or remove slash to pvt prop for disposal by chipping or burning during winter/spring.
- Wood collecting permit
 - If homeowner desires firewood from FUP required to obtain fuelwood personal use permit. \$10/cord, 2 cord min.