

IDENTIFICATION AND CARE

USDA Forest Service

Forest Health Protection

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INSECTS VS. PATHOGENS VS. ABIOTIC



- Notice damage to all trees
- Symptoms and damage patterns in all trees
- Signs and detailed symptoms on affected and adjacent trees

INSECTS



- Look for chewing, mining, punctures, or webbing
- Boring dust
- Pitching
- Entire sections dead

Photos courtesy of Forestry Images, Davey Tree

SCALES



Photo courtesy of Forestry Images.org



Photo courtesy of Forestry Images.org

PINE REPRODUCTION WEEVIL





**Pine Reproduction Weevil, Calaveras Ranger District,
Stanislaus National Forest 2008**

PINE ENGRAVERS



- Infestations often associated with slash
- Primarily infest small-diameter host (3"-10" diameter), tops of trees.
- Move to standing trees
- Prevention focuses on proper slash treatment (timing, disposal, placement)

Green slash: *proper disposal*

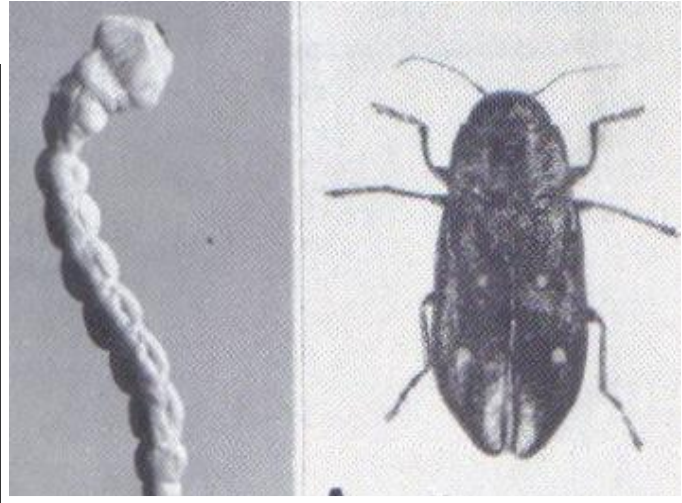
- Prevention of engraver beetles
- *Keep green slash away from residual/host trees*
- Hasten drying if possible
- *Wrap tightly in CLEAR plastic*





Slash Piling, Calaveras RD, Stanislaus National Forest 2018

WOODBORERS VS. BARK BEETLES



L306003

UGA5288091



PATHOGEN DAMAGE



- Symptoms may look regular or irregular
- Typical slow fade; thinning crowns
- Trees can still endure some foliar injury

UGA1241507

ANIMAL/MECHANICAL/PESTICIDE



ABIOTIC

Weather/Pollution

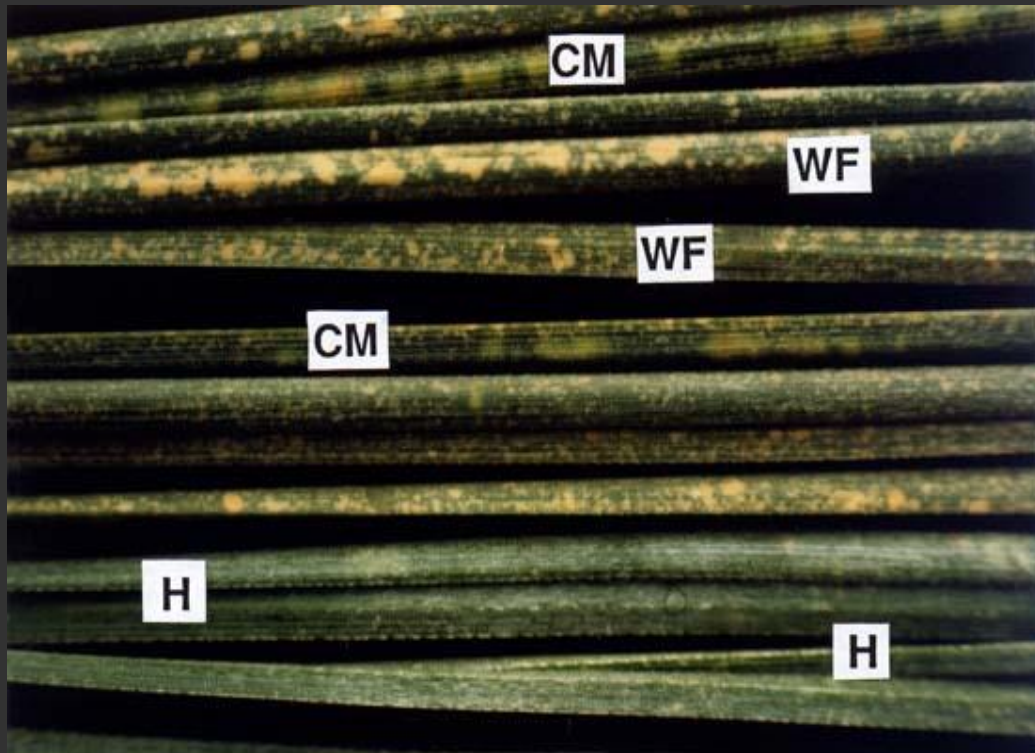


Photo courtesy of USDA Forest Service, GTR PSW 155 web

Frost/Dry winter winds



Photo courtesy of Wisconsin Dept of Natural Resources



Suppression



Snow loading, Sierra National Forest



Animal Damage

STEPS OF DIAGNOSIS

- Notice damage to all trees
- Look at symptoms and damage patterns in all trees
- Look for signs and more detailed symptoms on affected and adjacent trees
- Use past history, knowledge, records, etc. to determine outside causes for damage
- Be aware of common pest associations

THANK YOU