



United States  
Department of Agriculture

Forest Service

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**File Code:** 3420

**Date:** January 19, 2005

**Route To:** Bob Frost, Sale Administrator

**Subject:** Bear Fire Salvage Marking (FHP Rept. No. N05-03)

**To:** District Ranger, NRA

On January 18, 2005 I met with Bob Frost and Lisa Smith near the Jones Valley Boat Ramp to look at the marking to remove dead trees in the Bear Fire salvage. Logging was underway and Bob thought that some of the leave trees looked like they might be dying. We walked in the sale area for several hours and checked leave trees for fire damage.

The Bear Fire occurred in August. The fire was at low elevations and there was a lot of fuel. Even the areas that initially appeared to have the least damage got very hot in the fire. Because most of the burned area has similar elevations, similar burn intensities, the same aspect and is mostly ponderosa pine, it is fairly simple to predict delayed mortality caused by fire injury. The time frame for the mortality predictions would be 3 to 4 years after the fire (2007-2008). This time frame corresponds with the life cycle of the longest-lived beetles that would be involved in post-fire pine mortality.

In order to survive, the fire injured ponderosa pine need at least a 10% live crown and at least 50% of the circumference of the cambium alive and functional. The initial marking in the area was very conservative. As some trees were harvested, it became obvious that some leave trees did not have an adequate amount of live crown to survive. We also checked the condition of the cambium near the ground on numerous trees. It eventually became obvious that a high percentage of the trees in the sale area were almost completely girdled at the base.

We retained a few severely injured trees because they didn't quite meet the guidelines. Although we can be reasonably confident those trees won't die within the next 3 to 4 years, they are still severely injured. Those trees probably won't grow very fast, and may develop decay. Severely injured trees are not good choices for leave trees near campgrounds or other places people are expected to congregate.

Based on previous sales that were marked and not harvested, I would expect our marking to be 70 to 80 percent accurate. We will remove a few trees that could survive and we will leave a few trees that will die. The fact that we can reliably predict a few extra trees with die should be adequate to accommodate a need for future snag recruitment. However, if those snags occur near recreational facilities, there could be an issue with public safety.

The logs being removed showed extensive development of bluestain. This is caused by a fungus that enters the trees when they are attacked by bark beetles. The bluestain fungus does not cause



appreciable loss of strength of the wood. However, saprot fungi commonly enter the tree at about the same time. Because the Bear Fire was at low elevations, dead trees will deteriorate very quickly. By next winter, dead pines up to 12 inches dbh may begin falling. If any pines with a marginal probability for survival are left near the campgrounds, parking areas, or the Clickapudi Trail, it would be prudent to monitor their condition for safety purposes.

Give me a call at 226-2437 if you need to discuss any points.

Dave Schultz  
Entomologist