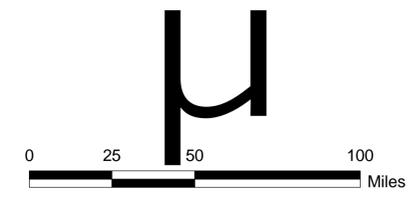


■ National Forest lands  
■ Tribal lands  
**Damage Agent\***  
■ Western spruce budworm defoliation  
■ Aspen defoliation and mortality  
■ True fir mortality from bark beetles  
■ Bark beetles in ponderosa pine  
■ Unknown defoliator(s)  
■ Piñon needle scale  
■ Douglas-fir beetle  
■ Needle cast

\*Only agents affecting greater than 5,000 acres Region-wide are depicted.



The forest mortality and defoliation depicted here is based on aerial detection surveys and should only be used as a general indicator of incidence. This map represents the mortality and defoliation that has occurred since the previous surveys in 2007. Depending upon the timing of survey, the entire extent of some insect and disease activity may not have been detected. In addition, most diseases cause gradual declines in tree health that are not typically detectable during aerial surveys. Intensity of damage is variable, thus not all trees within a mapped area are dead or defoliated. Caution should be used in interpreting these results due to the scale and subjective nature of aerial sketch mapping. Areas of particular concern should be ground-checked for precise determination of location and causal agent.

**Arizona**  
 Surveys conducted July through September, 2008, by Steve Dudley, Bobbe Fitzgibbon, and Daniel Ryerson, Forest Health Office, Southwestern Region, US Forest Service; Aaron Green, Arizona State Land Department, Forestry Division.

**New Mexico**  
 Surveys conducted June through September, 2008 by Daniel Ryerson and Bobbe Fitzgibbon, Forest Health Office, Southwestern Region, US Forest Service; Stephani Sandoval, New Mexico State University Cooperative Extension Service; William Ciesla, Forest Health Management International.

# Significant Forest Mortality and Defoliation Detected through Aerial Survey

## Southwestern Region - 2008