



**Mortality**

- Aspen decline
- Bark beetles in ponderosa pine
- Cedar bark beetles
- Western balsam bark beetle
- Fir engraver beetle
- Piñon ips beetle
- Douglas-fir beetle

50 Estimated number of fading dead trees  
 For mortality agents only, values not shown for spots of 1 acre or less, which range from 1 - 10 trees, no number of trees estimated for areas of aspen decline.

**Defoliation**

- Western spruce budworm
- Aspen defoliation - Light
- Aspen defoliation - Heavy

**Other**

- Discoloration / unknown defoliation
- Branch flagging

- Area not surveyed
- National Forest
- National Forest Wilderness
- Tribal lands
- Community location
- Major roads
- County boundaries

**Aerial Detection Survey Data Disclaimer**  
 Forest Health Protection (FHP) and the New Mexico State University Cooperative Extension Service strive to maintain an accurate Aerial Detection Survey (ADS) dataset, but due to the conditions under which the data are collected, FHP and its partners shall not be held responsible for missing or inaccurate data. ADS are not intended to replace more specific information. An accuracy assessment has not been done for this dataset; however, ground checks are completed in accordance with local and national guidelines <http://www.fs.fed.us/foresthealth/aviation/qualityassurance.shtml>. Maps and data may be updated without notice. Please cite "USDA Forest Service, Forest Health Protection and New Mexico State University Cooperative Extension Service" as the source of this data in maps and publications.

This map represents the mortality and defoliation that has occurred since the previous surveys in 2008. 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.

Surveyed 8/3/2009 - 8/5/2009 by Daniel Ryerson and Crystal Tischler, Forest Health, New Mexico Zone Office, Southwestern Region.

# 2009 Insect and Disease Aerial Survey Lincoln National Forest and Vicinity

1:250,000



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UTM Zone 13, North American Datum 1983