

Aerial Detection Survey, Pacific Southwest Region Far Southern Sierra Nevada Range of California, August 2019

Objective: The objective of this survey is to detect and record recently killed and damaged trees. Most of the mortality and damage is caused by insects and diseases.

Surveyors: J. Moore, L. McAfee, D. Depinte

Methodology: Recent tree mortality is mapped using Digital Mobile Sketch Mapping systems. Surveyors draw polygons or affix points (points not shown on map) and annotate percent of forested area affected along with damage type, tree species, and causal agent. The five-class rating system is: Very Light (1-3%), Light (4 -10%), Moderate (11-30%), Severe (31-50%), and Very Severe (>50%).

Survey Highlights:

This report is of preliminary findings in and around the El Dorado, Stanislaus, Sierra and Sequoia National Forests and Yosemite and Sequoia/Kings Canyon National Parks.

- White and California red fir mortality was detected across approximately 556,000 acres. Approximately 60% of the mortality was rated as having a light or very light intensity. Mortality was common throughout the area but occurred at generally higher intensities further south and at high to very high elevations.
- Jeffrey and ponderosa pine mortality was detected across 55,000 acres with over 80% of this area categorized as light or very light intensity. More concentrated mortality was observed south of Sentinel Peak on the Western Divide Ranger District, Sequoia NF.
- Lodgepole pine mortality was detected across 13,500 acres, with over 70% of this area categorized as either light or very light intensity. The mortality was primarily spread throughout much of the high country of Yosemite NP and the Sierra NF. Additionally, defoliation caused by lodgepole needleminer was more intense and widespread than it has been for many years and was concentrated primarily in the high eastern areas of Yosemite NP and southern Stanislaus NF.
- Five needle pine mortality includes limber, sugar, and whitebark pine and was observed collectively across 4,100 acres with more than 90% categorized as either light or very light intensity. Mortality occurred primarily along the far eastern and highest portions of Sierra NF south to the northern tip of the Sequoia NF.
- Other conifer mortality included Douglas-fir, knobcone pine, and single leaf pinyon pine and was observed collectively across less than 500 acres. Virtually all of this was categorized as either light or very light intensity.

Preliminary Summary

(numbers may change)

Area surveyed: 10.3 million acres

Acres with mortality: 629,050 acres

Host	Acres with Mortality
California red and white fir	556,000
Jeffrey and ponderosa pine	55,000
Lodgepole pine	13,500
Five-needle pine	4,100
Douglas-fir	300
Knobcone pine	100
Singleleaf pinyon pine	50
Total	629,050



Red fir mortality Northwest of Lake Isabella, Sequoia National Forest.



FOREST HEALTH PROTECTION AERIAL DETECTION MONITORING

2019 SURVEY Western South Sierras

