

Aerial Detection Survey Update

Background: Annual aerial detection surveys for tree mortality and injury have been conducted annually since 1994. This is an update of survey status for the 2014 season.

Objective: Detect and map tree mortality and damage in California / USFS Region 5.

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Date: July 21st to 24th, 2014

Methodology: Recently dead and damaged trees (still retaining dead foliage) were mapped visually by surveyors using digital aerial sketch-mapping systems, flying in a light fixed-wing aircraft approximately 1,500 feet above ground level. Surveyors record the number and species of affected trees and type of damage (mortality, defoliation, etc.) at each mapped location.

Details:

- About 4.7 million acres were surveyed in the southern Sierra Nevada Range and the Tehachapi Mountains, including the Sequoia and Sierra National Forests, and portions of the Sequoia-Kings and Yosemite National Parks. See Figure 1.
- Over 140,000 acres with some amount of pine mortality were mapped across the survey area, compared to about 80,000 acres last year. Ground surveys have found much of the pine mortality in the southern Sierra is due to California flat-headed borer. Ponderosa and Jeffrey pine were the most commonly affected trees, and most of these areas included scattered sugar pine mortality as well. Figures 2-6. Lodgepole pine was experiencing substantial die-off in some locations, particularly on the Sequoia N.P. and Sierra N.F.
- Many large areas of pine mortality, especially in the northern portion of the survey area, included true fir mortality as well.
- Areas of defoliation from lodgepole needleminer were observed at the higher elevations of Yosemite National Park.
- Incense cedar mortality, not commonly observed in our surveys, was mapped in several drainages in the Tehachapi Range.
- High levels of pinyon pine mortality were mapped in the Chimney and Owens Mountain area, east of the Sequoia National Forest.
- Early defoliation of oaks from drought, mostly blue oak, was observed along the Sierra foothills, in the same general area as last year.

Figure 1. Flown area and mapped tree mortality and damage

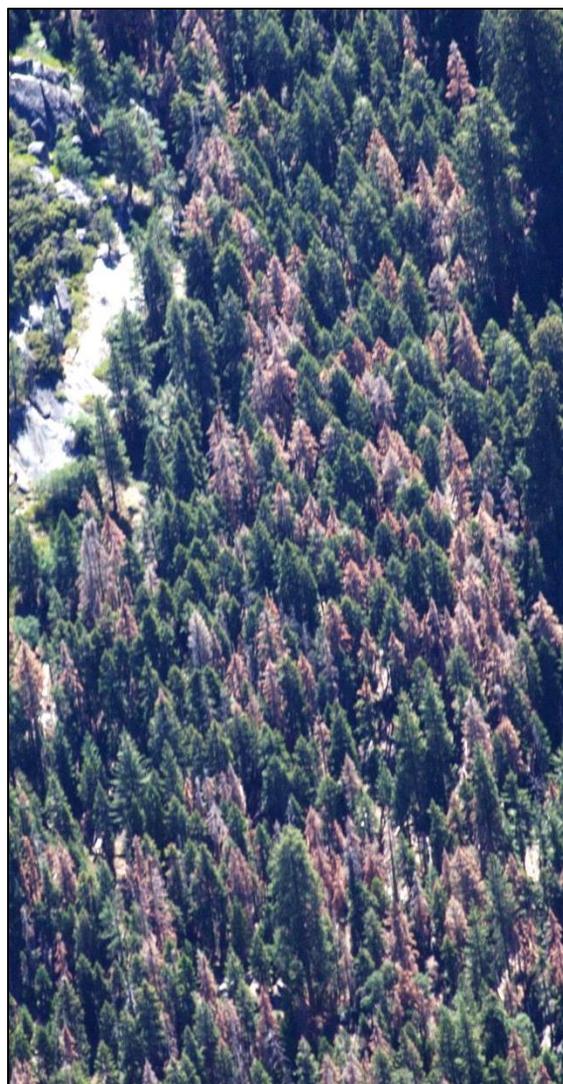
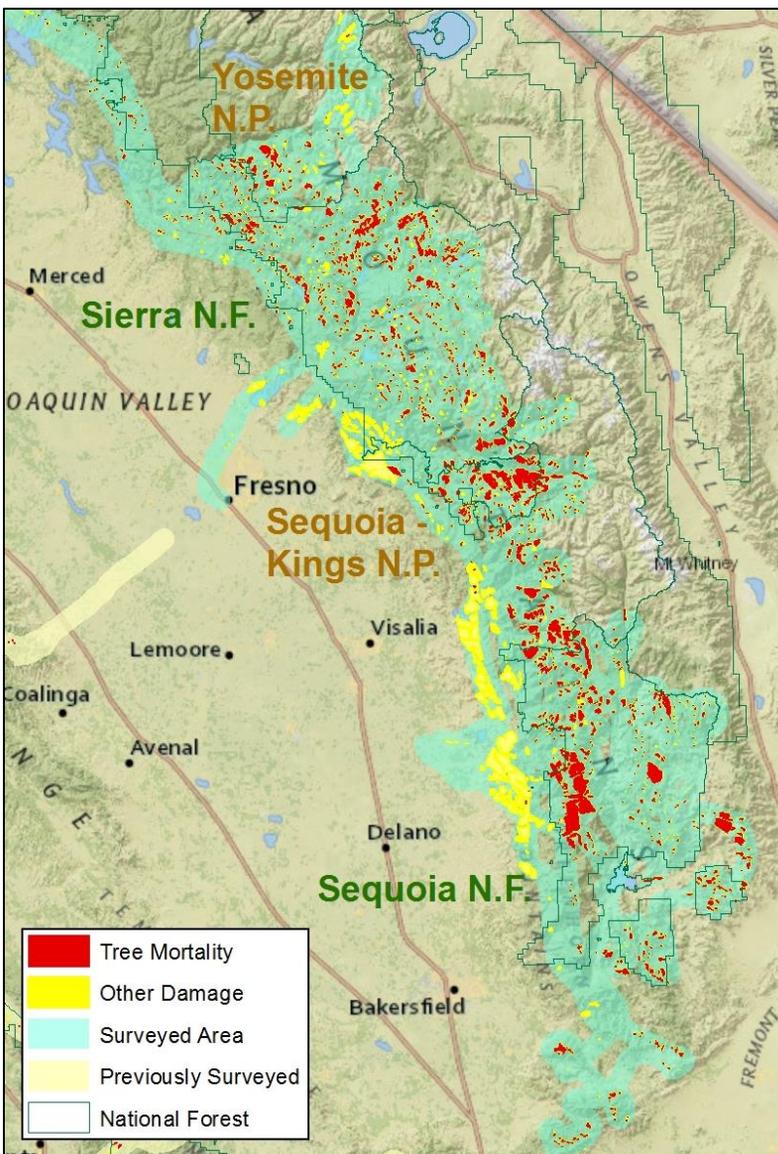


Figure 2. Severe mortality on the Hume Lake District, Sequoia N.F.



Figure 3. Widespread conifer mortality on the Hume Lake District, Sequoia National Forest.

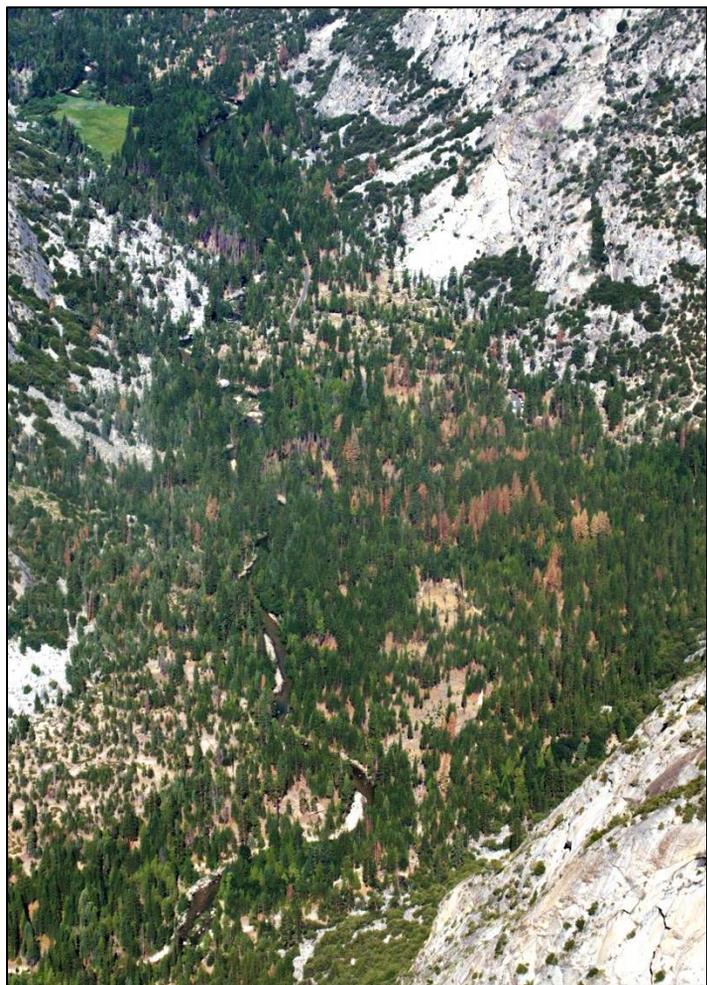


Figure 4. Pine mortality along the South Fork Kings River, Kings Canyon National Park.

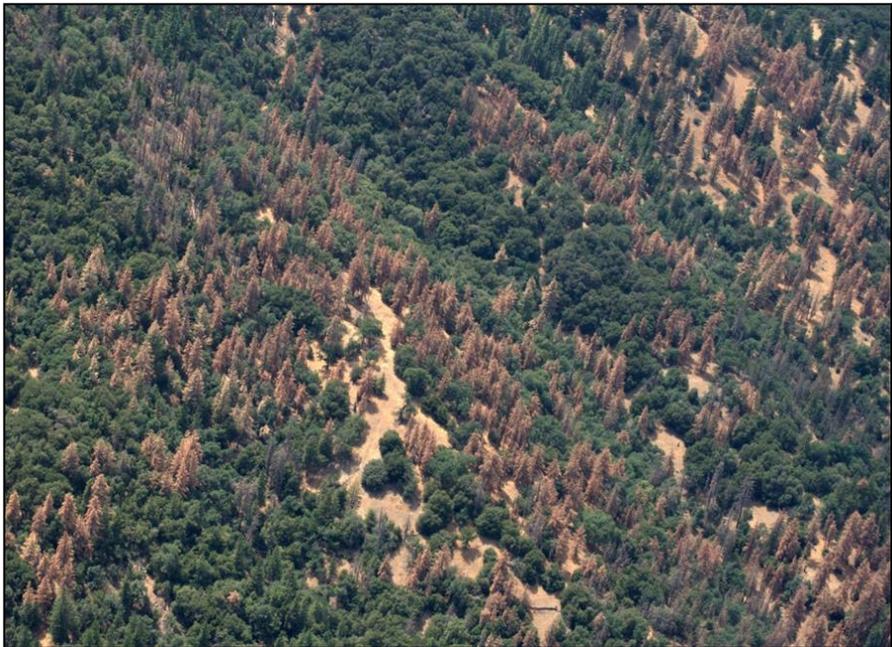


Figure 5. Jeffrey pine mortality in the Tehachapi Range.

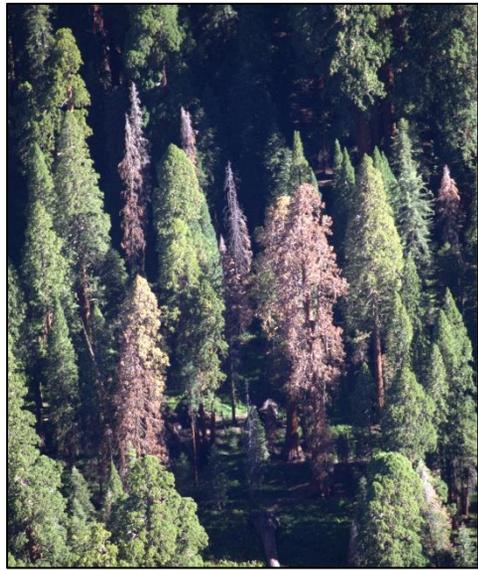


Figure 6. Pine mortality within a giant sequoia grove, Sequoia N.P.

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