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.

Surveyors: Z. Heath, A. Jirka, D. Cluck

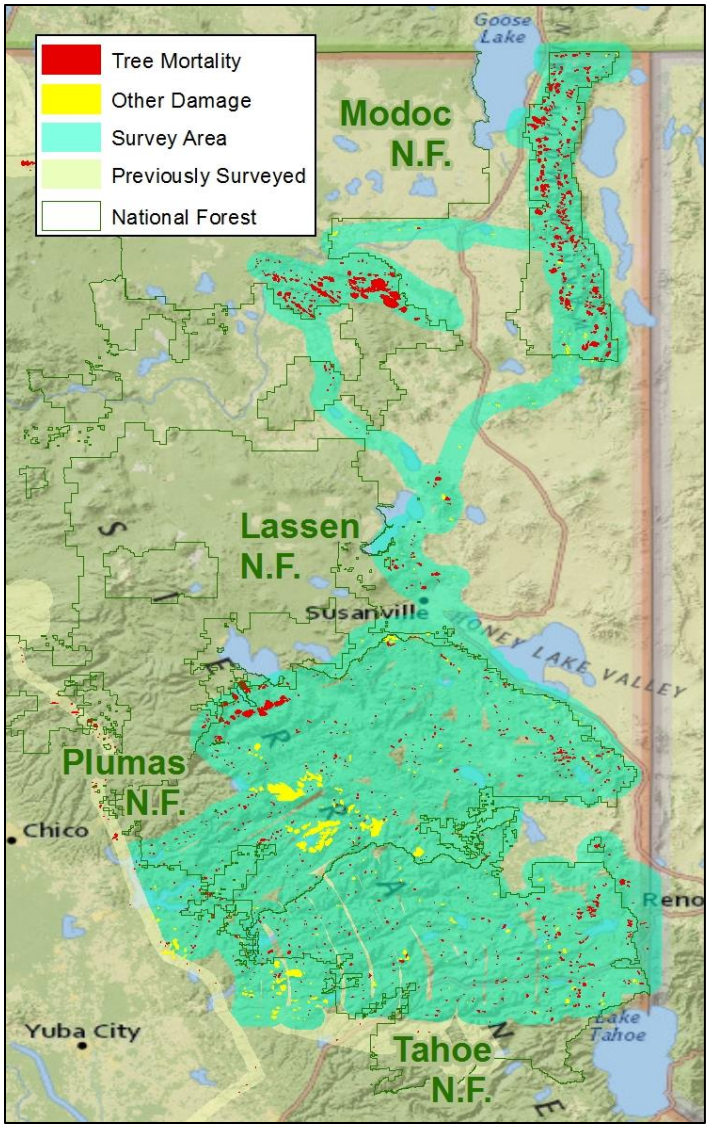
Date: August 4th to 8th, 2014

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:

- Almost 4.0 million acres were surveyed, covering much of the Plumas and Tahoe National Forests, as well as part of the Modoc. See Figure 1. Conditions on the Modoc were smoky due to the previous week's lightning fires.
- Douglas-fir tussock moth was widespread on the Plumas, defoliating about 20,000 acres of white fir, more than triple the acreage mapped last year. A small area of tussock moth was seen on BLM land east of Eagle Lake as well. Figure 2.
- On the Modoc, a large increase in white fir mortality was observed. Some areas on the Warners had high rates of mortality. Figure 3. The Tahoe also appeared to have a slight increase in true fir mortality.
- Very little recent mortality from Douglas-fir beetle was observed on the Plumas this year. Most trees appeared to have died several years ago. Figure 4.
- Much less mortality from mountain pine beetle was observed this year on the Warners, compared to previous years. Figure 5.
- Ponderosa and Jeffrey pine mortality was similar to last year, with extensive areas of mortality on the Modoc, and only light mortality on the Plumas and Tahoe, although it appeared pine mortality was increasing on the eastern edges of those forests.

Figure 1. Flown area and mapped tree mortality and damage



- Abundant, recent pine mortality was mapped inside the 2012 Chips Fire perimeter.
- Aspen defoliation was common in the eastern extent of the area surveyed. Some of these areas have been verified on the ground to be satin moth. Figure 6.
- Damage from western gall rust was visible from the air in the Grass Valley area.

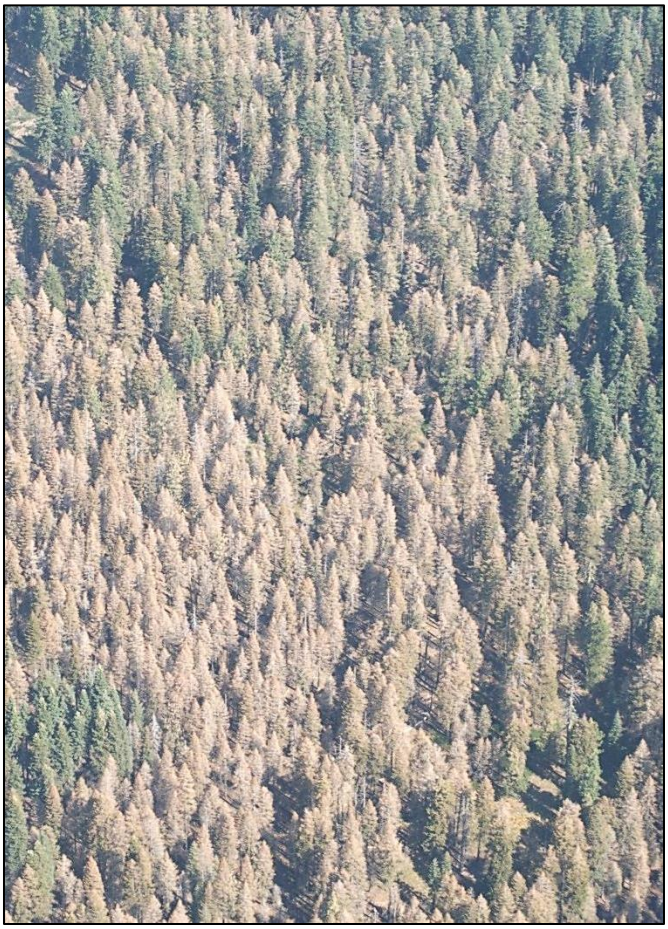


Figure 2. Defoliated white fir on the Plumas National Forest.

Figure 3. White fir mortality on the Warner Mountains, near Halls Meadows Reservoir.

Figure 4. Large pocket of Douglas-fir beetle-caused mortality on the Plumas near Taylorsville. Most trees died a year or two ago.

Figure 5. Old lodgepole pine mortality killed by mountain pine beetle several years ago. Mount Bidwell, Warner Mountains, Modoc National Forest.

Figure 6. Aspen defoliation south of the Warner Mountains, Modoc National Forest.

Direct questions pertaining to this report to Zachary Heath (email: zheath@fs.fed.us phone: 530-759- 1751). Report Date August 12, 2014.