

## Southern Sierra Foothill Oak Mortality Aerial Survey - Spring 2011

**Background:** Goldspotted oak borer (GSOB) was first detected in California (San Diego County) in 2004. This borer has since been linked to elevated levels of oak mortality in San Diego County detected via aerial surveys since 2002. Anecdotal evidence suggests large amounts of potentially GSOB-infested firewood was moved to the Bakersfield area in recent years, increasing the potential for this invasive insect to spread to the oak woodlands of the San Joaquin Valley. Funding for this survey was provided by CalFire.

**Objective:** Detect and map oak injury and mortality in the oak woodlands of the southern Sierra Nevada foothills. Areas with greater than normal mortality will be checked on the ground for the presence of gold-spotted oak borer.

**Surveyors:** Z. Heath, B. Oblinger and R. Noyes

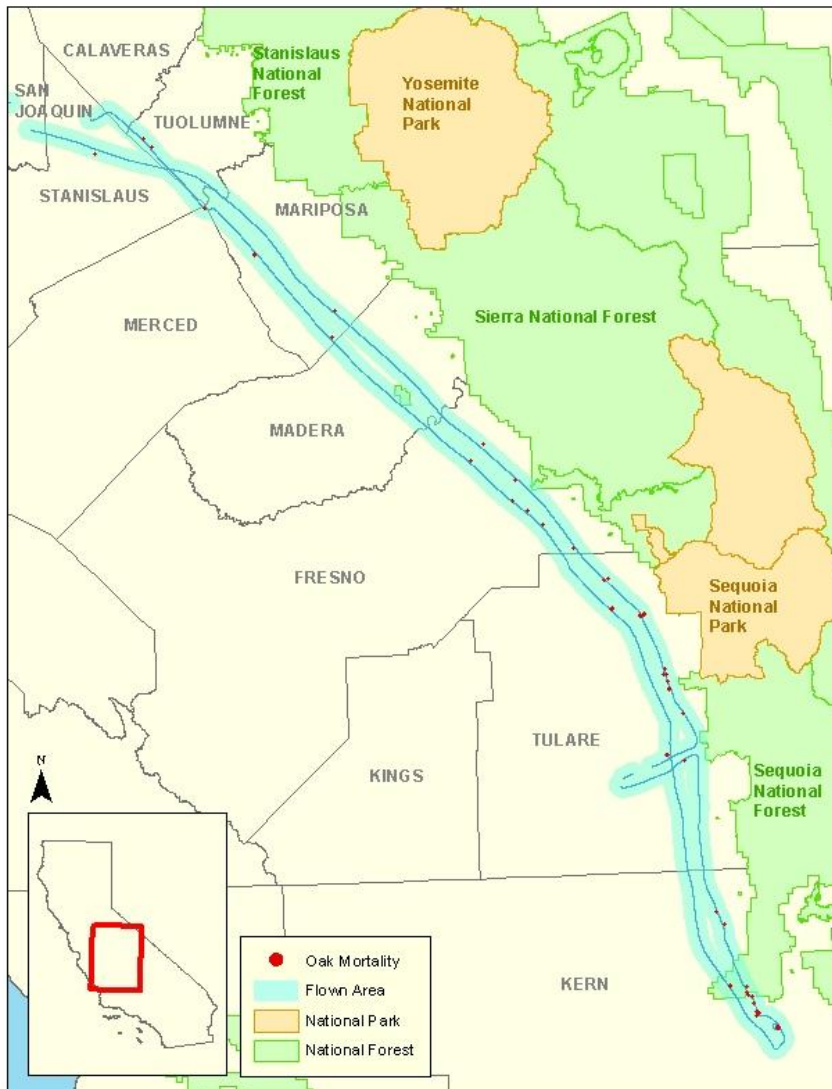
**Date:** June 1, 2011. The early timing was selected to avoid seasonal color change of California buckeye.

**Methodology:** Recently dead or injured trees (trees still retaining dead foliage) were mapped visually by surveyors using digital aerial sketch-mapping systems flying in a light fixed-wing aircraft approximately 1,000 feet above ground level. Photographs were also taken of the mapped trees to aid in ground visits. Surveyors recorded number and species of dead trees and type of damage (mortality, defoliation, branch flagging) at each mapped location.

### Details:

- Over five hundred miles were flown, covering 1.7 million acres over portions of 7 counties – Stanislaus, Tuolumne, Merced, Madera, Fresno, Tulare and Kern Counties. The vast majority of the area covered was private ownership. Small portions of the Sierra and Sequoia National Forests was surveyed. See Figure 1.
- A total of 103 dead oak trees were mapped. Over half the trees mapped were unknown hardwoods in two locations near Walker Basin. See Figure 2. The remaining trees mapped were mostly individual blue, live and valley oak scattered throughout the flown area.
- Overall, the amount of oak mortality mapped was considerably less in comparison to areas with known GSOB infestations.
- Survey data, including locations of mortality, flight-lines, and photographs are available for viewing in Google Earth and Google Maps at: <http://www.fs.fed.us/r5/spf/fhp/fhm/aerial/2011/kmz/index.shtml>

Figure 1. Flown area and mapped oak mortality



### Summary:

Miles flown: 500

Acres surveyed: 1.7 million

Acres with mortality mapped: 60

Number of dead trees: 103

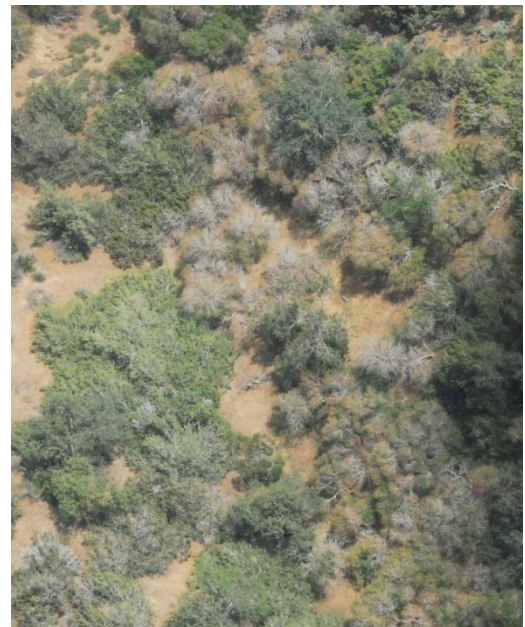


Figure 2. Hardwood dieback and mortality near Walker Basin, Kern County

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