

Jeff Moore¹, Amy Jirka², Loren McAfee², Zachary Heath³, Kathleen Mathews⁴, Chad Nelson⁴, Adam Ellis¹

Aerial surveys are conducted annually by R5 Forest Health Protection in order to record and map recent tree mortality and current injury using a digital aerial sketch mapping system.

- Overall, mapped mortality was up tremendously, with about 2,910,000 acres with elevated mortality mapped in 2015 up from about 909,000 in 2014.
- In addition, an estimated 29.1 million trees were killed up from around 3.3 million in 2014.
- This dramatic increase was driven by prolonged exceptional drought conditions statewide especially from the Central Coast east into the Southern Sierra Nevadas which is where the most of the mortality occurred.
- The 2015 surveys covered over 45 million acres of California. All National Forests and forested National Parks as well as most State and private lands were surveyed.

Highlights

Conifer Mortality

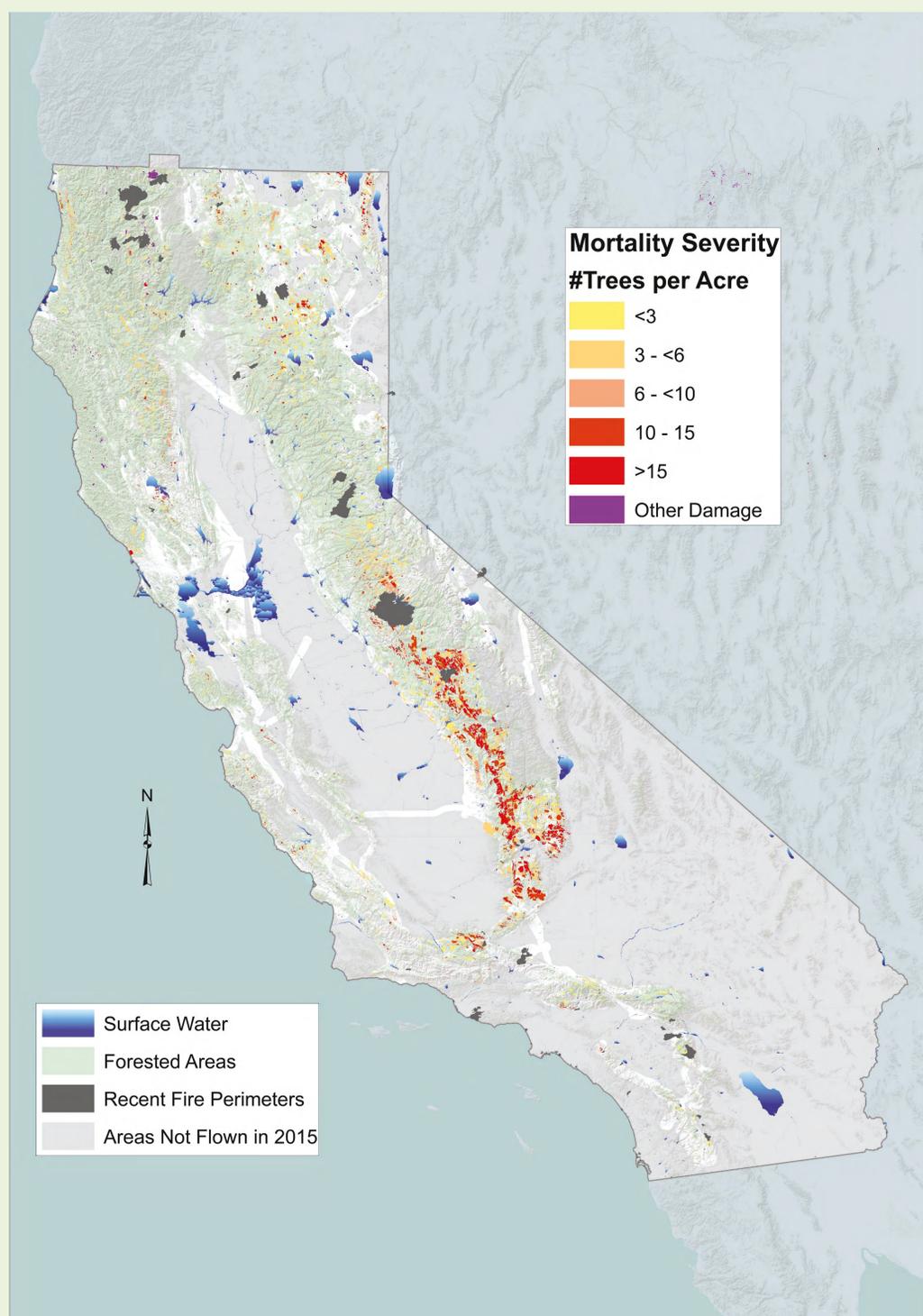
- Statewide, the vast majority of acres with mortality mapped primarily consisted of conifers mostly ponderosa, Jeffrey and pinyon pine although most other pine species, white fir and incense-cedar were also heavily impacted. Most of this mortality was attributed to mountain pine beetle though drought was the predetermining factor.
- Mortality was most severe in the Southern Sierra Nevadas and transverse mountain ranges. However, less widespread but locally intense areas of mortality were common Region wide in discreet pockets.
- Landscape levels of moderate white fir mortality were found throughout most if its range.

Oak Mortality and Damage

- Low elevation foothills were flown early in June with special consideration to oak conditions. Drought induced discoloration and defoliation were commonly recorded along with mortality and suspected mortality (blue oak) again mostly in the Southern areas of the State in June.
- Another modest decrease in Sudden Oak Death was again observed since dry conditions are not conducive to the spread of this disease.

Other Highlights

- Cytospora in California red fir was more intense than in previous years and it is suspected that a single widespread rain event in late spring likely exacerbated this ongoing chronic situation
- The Douglas-fir tussock moth event primarily on the Plumas NF completely subsided with only moderate amounts of resulting mortality and topkill.
- GSOB was mostly unchanged from previous years.



Flight Information

Aerial surveys have been conducted in R5 since 1994 to map forest disturbance activity on Forest Service land in California. The 2015 aerial detection surveys took place from June 8th through November 22nd, Flights were typically flown on a 3.5 mile grid, with two observers mapping out opposite sides of a Cessna 205. A total of 25,153 miles were flown over 240 hours, covering more than 46 million acres including parts of Nevada.

¹U.S.D.A. Forest Service, Region 5 FHP
1731 Research Park Dr., Davis, CA

²Quercus Consulting
1135 Pine Street, Redding CA

³U.S.D.A. Forest Service, Region 6 FHP
RO, Portland, OR

⁴U.S.D.A. Forest Service, Region 4 FHP
1249 S. Vinnell Way, Ste 200, Boise, ID