



## Aerial Detection Survey, Pacific Southwest Region Southern California, Preliminary Report, July 2021

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

**Surveyors:** J. Moore, S. McKelvey

**Methodology:** Recent tree mortality was mapped using Digital Mobile Sketch Mapping systems. Surveyors drew polygons and annotated 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%).

Small groups of trees were recorded as point data and have no acreage assigned until later processing. Southern California had a high incidence of point data that is not tabulated in this report but is depicted on the map at an exaggerated scale.

### Survey Highlights:

This report presents preliminary findings in and around the San Bernardino, Angeles, and Cleveland National Forests (NFs). Recent tree mortality is mostly comprised of white fir, Jeffrey pine and mixed oak.

- Jeffrey pine mortality was detected on 1,300 acres and was primarily concentrated in the San Bernardino Mountains and in the foothills surrounding Big Bear Lake on the San Bernardino NF at very light to moderate intensities. This may include ponderosa and Coulter pine, as these species are difficult to differentiate from the air.
- White fir mortality was detected on 2,900 acres and was scattered throughout its range, mostly in small groups or at light intensities.
- Mixed oak mortality was observed across 4,500 acres. Oaks included Engelmann, black, and interior and canyon live oaks. The mortality ranged from very light to severe but was mostly categorized as moderate intensity. The most widespread area of mortality occurred south of Palomar Mountain. A new area of oak mortality was observed in and around Bedford Canyon on the Trabuco District.
- Pinyon pine mortality was detected on over 500 acres, concentrated primarily southeast of Big Bear Lake and southwest of Tehachapi Mountain, mostly at light to moderate intensity.
- Other conifer mortality, consisting of bigcone Douglas-fir, sugar pine, gray pine, and whitebark pine, was detected in small groups and mostly recorded as point data with no acreage yet assigned.
- 700 acres of severe pine discoloration was observed southwest of the San Jacinto Mountains, San Bernardino NF.

### Preliminary Summary (numbers may change)

Area surveyed: 3.3 million acres  
Acres with mortality: 9,300 acres

Host	Acres with Mortality
Mixed Oaks	4,500
White fir	2,900
Jeffrey, Coulter, and ponderosa pine	1,300
Other conifer	600
Total	9,300



Oak mortality, likely due to goldspotted oak borer, along the Men-denhall Valley near Palomar Mountain, San Diego County.



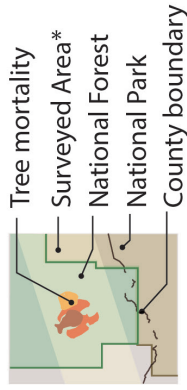
Jeffrey pine mortality, likely due to Jeffrey pine beetle, located near Little Thomas Mountain, Riverside County.



UNITED STATES DEPARTMENT OF AGRICULTURE

# FOREST HEALTH PROTECTION AERIAL DETECTION MONITORING

## 2021 SURVEY SOUTHERN CALIFORNIA



\*This map depicts tree mortality only within the surveyed area.

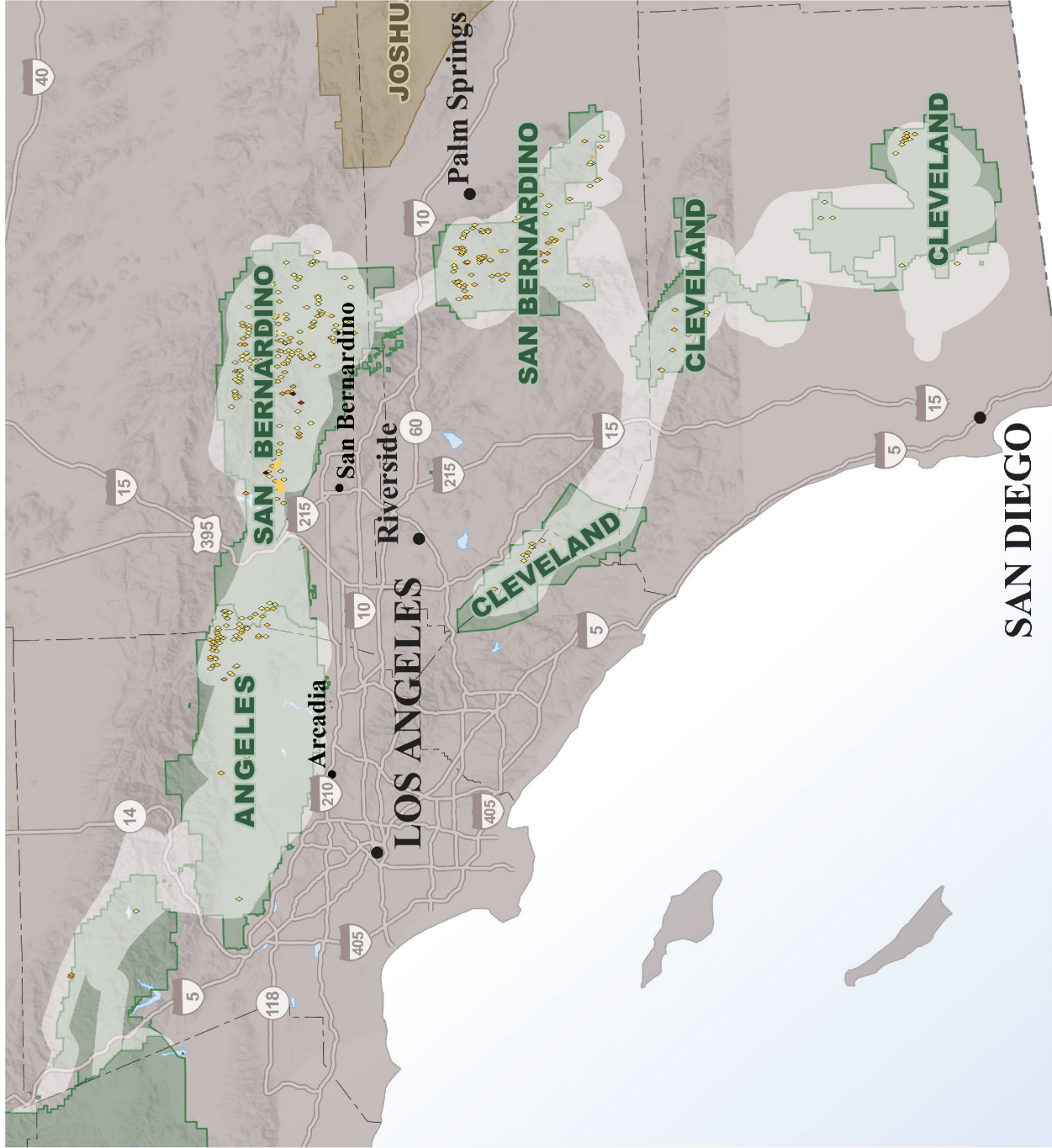
### Percent Trees Affected (areas)

- Very Light (1-3%)
- Light (4-10%)
- Moderate (11-29%)
- Severe (30-50%)
- Very Severe (>50%)

### Number of Trees Affected (points)

- Very Light (1 tree)
- Light (2 - 5 trees)
- Moderate (6 - 15 trees)
- Severe (16 - 30 trees)
- Very Severe (>30 trees)

Map only depicts dead trees surveyed in 2021. Areas of tree mortality are for visualization purposes only.



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