2016 Insect and Disease Survey by Subwatersheds (6th Level HUCs)

Approximate Footprint Acres with Mortality: 7.9 million*

*Acres are summarized from current year’s observations only and are not cumulative. The “footprint” total represents the affected area on the ground with no multiple counting of acres affected by multiple mortality agents.
Detection and Aerial Survey Overview

Aerial detection surveys are an efficient and economical method of collecting and reporting data on forest insects, diseases, and other disturbances. Aerial sketchmapping is the primary data-collection method: data are collected by aerial observers from the Forest Service and other cooperating state and federal agencies. Areas of damage are captured as polygons using an automated sketch mapping system; Digital Mobile Sketchmapping (DMSM) or the legacy Digital Aerial Sketchmapping (D-ASM). Both use a moving map display, GPS tracking, and touch screen technology to create a digital version of the data on-the-fly in the aircraft. It is important to note that sketch mapping is a valuable but subjective endeavor with inherent spatial and attribute inaccuracies.

Polygons are coded to identify the damage agent, damage type, host, and other attributes. For data collected with DMSM, damage intensity is characterized by the percent of live and standing dead trees affected in the feature area. For data collected with D-ASM, the same percent affected is collected in some regions, while others report the number of dead trees or dead trees per acre. Until all areas adopt this new percent affected measure, acres are reported as acres “with” mortality.

Areas with mortality are summarized on this map by 12-digit or 6th-level USGS subwatersheds. These 10,000 to 40,000 acre units are consistent with those in the Forest Service Watershed Condition Framework (Potyondy and Geier 2011). At the national scale, watershed summarization makes it easier to visualize mortality information. It especially helps highlight areas where activity consists of small and sparsely located polygons as is the case with some key species like southern pine beetle and emerald ash borer.

Resources:
Detection Surveys Overview, online at: https://www.fs.fed.us/foresthealth/technology/detection_surveys.shtml


Summary for 2016:

Footprint acres with tree mortality: 7,865,000

Note: Acres are summarized from current year’s observations only and are not cumulative. The “footprint” total represents the affected area on the ground with no multiple counting of acres affected by multiple agents.

Top 5 mortality agents: Percent of footprint acres with mortality

- Fir engraver* 37%
- Western pine beetle* 28%
- Mountain pine beetle 20%
- Emerald ash borer 10%
- Jeffrey pine beetle* 10%

*Many areas in California were affected by multiple agents including fir engraver, Jeffrey pine beetle and western pine beetle.

Acres with mortality were reported in 47 states. California reported the most with 4.3 million acres.