

2004 Insect and Disease Aerial Detection Surveys – Acres with Mortality

Aerial Survey Overview

Conducting aerial detection surveys is one method of collecting and reporting data on forest insects, diseases, and other disturbances that is efficient and economical. 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 hardcopy 1:100,000 scale maps or a Digital Aerial Sketchmapping System (D-ASM). The D-ASM uses a moving map display, GPS, and touch screen technology to create a digital version of the data on-the-fly in the aircraft. Regardless of the method, it is important to note that sketchmapping is a valuable but subjective endeavor with inherent spatial and attribute inaccuracies.

Polygons are coded to identify the damage agent, damage type, and a number of other attributes. Reporting the number of dead trees or dead trees per acre is required for areas with mortality. In large areas where mortality is widely scattered, other attributes may be used to capture the pattern of damage, but are not required. In all cases, mortality may be continuous or discontinuous therefore acres reported here are acres “with” mortality.

The data for southern pine beetle and emerald ash borer displayed on this map are not captured from aerial survey. The southern pine beetle data are extrapolated from information reported by counties on total spots and trees per spot. Emerald ash borer information is derived from ground plot data.

Resources:

A Guide to Conducting Aerial Sketchmapping Surveys. McConnell, T.J., Johnson, E.W., and Burns, B., USDA Forest Service Publication, FHTET 00-01, March 2000.

Digital Aerial Sketchmapping. Schrader-Patton, C., USDA Forest Service Remote Sensing Application Center publication, RSAC-LSP-3400-RPT2, May 2002.

Aerial Survey Geographic Information System Handbook, June 2003 and Forest Health Monitoring Aerial Survey Standards, October 1999 online at: http://www.fs.fed.us/foresthealth/publications/id/id_guidelines.html.

Summary for 2004:

Acres with mortality:	10,340,000
Acres with scattered mortality:	4,438,000
Footprint acres with mortality:	14,776,000

Note: Acres are summarized from the current year's observations only and are not cumulative. Multiple counting of acres may occur between categories if an area is observed to have simultaneous multiple damage types. However, multiple counting of acres does not occur within a category. The "footprint" total represents the affected area on the ground with no multiple counting.

Emerald ash borer accounts for approximately 90% of the acres coded as scattered mortality. Excluding emerald ash borer, the top five mortality agents are listed below.

• Mountain pine beetle	21%
• Fir engraver	
• Pinion ips/pinion pine mortality	15%
• Other non-specified bark beetles (mostly reported by R5)	10%
• Subalpine fir mortality	6%

Acres with mortality were reported in 41 states. California reported the most with 2 million acres.

The total cost of aerial survey is approx \$5 million annually or roughly \$.01 per acre surveyed.

