

2011 Aerial Insect and Disease Survey Walsenburg, Colorado USGS 100K TOPO!: 37104-E1



1:100,000

Legend

Causal Agent(s) **Not Flown**

Use of the Number System
Example: 5-25 = The first number before the dash is the causal agent code. The number after the dash is the number of dead "faded" trees in the polygon or point. When recent dead trees are not counted, an intensity code of L-light, M-moderate, and H-high may be used after the causal agent code. Periodically, trees per acre estimates are used after the causal agent code instead of number of dead "faded" trees (or an intensity code). For example: 5-12A = The first number before the dash is the causal agent code. The number after the dash is an estimation of the number of dead "faded" trees in the polygon per acre. In this case it would be an estimation that, on the average, one tree per every two acres would be a dead "faded" tree. In another example: 5-3A = that on the average, an estimated three trees per acre are dead "faded" trees. A "7" is used as a separator when a point polygon has more than one causal agent code.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas fir beetle	Douglas Pine	49	Atropis	Lodgepole Pine
2	Engelmann spruce beetle	Engelmann Spruce	50	White pine blister rust	Lodgepole Pine
3	Blue spruce tip	Blue Spruce	51	Deer fly	Softwoods
4	Mountain pine beetle	Ponderosa Pine	52	Elysiroidea	Ponderosa Pine
5	Mountain pine beetle	Lodgepole Pine	53	Included #5, 56 & 58	All Tree Species
6	Mountain pine beetle	Ponderosa Pine	54	Air pollutants	All Tree Species
7	Fire Enginer	White Fir	55	Chemical damage	All Tree Species
8	Western pine beetle	Ponderosa Pine	56	Lophodermium pectus	Softwoods
9	Douglas fir engraver beetle	Douglas fir	57	Rhabdocline pseudotsugae	Douglas fir
10	Douglas fir engraver beetle	Subalpine Fir	58	Lophodermium arcaata	Softwoods
11	Western balsam bark beetle	Softwoods	59	Lecanotia abocata	Softwoods
12	Unidentified bark beetle	Softwoods	60	Lophodermium concolor	Softwoods
13	Pine engraver	Lodgepole Pine	61	Deltotoma pine	Softwoods
14	Pine engraver	Ponderosa Pine	62	Needle cast (Hypodermatidae)	Softwoods
15	Ponderosa pine needle miner	Lodgepole Pine	63	Rod Rot	All Tree Species
16	Lodgepole pine needle miner	Jack Pine	64	Unidentified disease	All Tree Species
17	Jack pine subworm	Jack Pine	65	Winter damage light	All Tree Species
18	Spruce budworm, light defol.	Douglas fir	66	Winter damage medium	All Tree Species
19	Spruce budworm, medium defol.	Douglas fir	67	Winter damage heavy	All Tree Species
20	Spruce budworm, heavy defol.	Douglas fir	68	Diploids	Softwoods
21	Pine tussock moth	Ponderosa Pine	69	Pinon bark stain	Common Pinon
22	Pine butterfly	Douglas fir	70	Fire	All Tree Species
23	Pine looper	Ponderosa Pine	71	Porcupine	Hardwoods
24	Pine tortrix	Ponderosa Pine	72	Windthrow	All Tree Species
25	Tent caterpillar	Hardwoods	73	Juniper mortality (unknown agents)	Juniper
26	Leaf beetles	Hardwoods	74	High water damage	All Tree Species
27	Aspen defoliation	Hardwoods	75	Avalanche	All Tree Species
28	Oak leaf roller	Hardwoods	76	Aspen decline multiple agents)	Quaking Aspen
29	Pine needle-steam miner	Ponderosa Pine	77	Pinon pine mortality	Common Pinon
30	Pine sawflies	Ponderosa Pine	78	Juniper mortality (unknown agents)	Juniper
31	Pine tussock moth	Ponderosa Pine	79	Gambel oak decline (unknown agents)	Gambel Oak
32	Cantharellus	Hardwoods	80	Limber pine decline multiple agents)	Limber Pine
33	Variable oak leaf caterpillar	Hardwoods	81	Hail damage	All Tree Species
34	Unidentified defoliator	All Tree Species	82	Unknown polygon	Unknown polygon
35	Cottonwood Decline/Mortality	Cottonwood	83	Old prison mortality	Common Pinon
36	Heterobasidium annosum (Fomes annosus)	Softwoods	84	Old prison mortality	Lodgepole Pine
37	Amelara octopus (Amelara melae)	Softwoods	85	Unidentified defoliator (cottonwood)	Cottonwood
38	Phoropsis	Softwoods	86	dutch elm disease	Elm
39	Cynophora	All Tree Species	87	Unidentified defoliator (elm)	Elm
40	Western gall rust	Unknown	88	Unidentified defoliator (hardwood)	Hardwoods
41	Conandra rust	Unknown	89	drought killed narrow leaf cottonwood	Narrowleaf Cottonwood
42			90	Mortality (pine)	Pine
43			91	6x squirrel logging	Cottonwood/Poplar
44			92	road salt	Softwoods
45			93	greenwood nematode	Scotch Pine
46			94	oak wilt	Oak
47			95	knag disease	All Tree Species
48			96	white spruce	White Spruce
49			97	knotted chestnut borer	Oak
50			98	anthracnose like leaf disease	All Tree Species
51			99	Mortality	All Tree Species
52			100	Lecanotia	All Tree Species
53			101	Herbicide	All Tree Species
54			102	Flagging	All Tree Species
55			103	120 Aspen tortrix	Quaking Aspen
56			104	Marsdenia blight	Quaking Aspen
57			105	Dieback (hardwood)	Hardwoods
58			106	Dieback (oak)	Hardwoods
59			107	Dieback (oak)	Oak
60			108	Dieback (oak)	Hardwoods
61			109	Mortality (eastern cedar)	Eastern Red Cedar
62			110	Mortality (hardwood)	Hardwoods
63			111	Mortality (oak)	Oak
64			112	Discoloration (oak)	Oak
65			113	Discoloration (oak)	Oak
66			114	Discoloration (oak)	Oak
67			115	Discoloration (oak)	Oak
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152			200	Discoloration (oak)	Oak

USGS 100K Quad - Location Map



How Aerial Surveys Are Conducted

Data represented on this map are based on aerial observations manually recorded onto a map. This procedure is considered both an art form and a form of scientific data collection, and is highly subjective. An observer only has a few seconds to recognize the color difference between healthy and damaged trees of different species; diagnose causal agents correctly; estimate intensity; delineate the extent of damage; and precisely record this information on a georeferenced map. Air turbulence, cloud shadows, distance from aircraft, haze, smoke, and observer experience can all affect the quality of the survey. These data summaries provide an estimate of conditions on the ground and may differ from estimates derived by other methods.

Aerial surveys provide information on the current status for many causal agents, and are important when examining insect activity trends by comparing historical and current survey data over large areas.

Overview surveys are a "snap shot" in time and therefore may not be timed to accurately capture the true extent or severity of a particular disturbance activity. Aerial surveys can be thought of as the first stage in a multi-stage sampling design. Other remote sensing approaches, including aerial photography, electro-optical sensors, and specially designed aerial surveys with modified flight patterns, can be used to more accurately delineate the extent and severity of a particular disturbance agent. The preceding methods are often more costly than overview surveys, and are generally reserved to address situations of sufficient environmental, economic, or political importance.

Map Created December 1 2011
Projection: UTM NAD83 Zone 13
Author: J. Ross, USDA Forest Service

A data dictionary and digital copies of this map and the insect and disease data are available at: <http://www.fs.fed.us/r2/resources/fhm/aerialsurvey/>

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*****DISCLAIMER*****
Forest Health Protection (FHP) and its partners strive to maintain an accurate Aerial Detection Survey (ADS) Dataset, but due to the conditions under which the data are collected, FHP and its partners shall not be held responsible for missing or inaccurate data. ADS are not intended to replace more specific information. An accuracy assessment has not been done for this dataset; however, ground checks are completed in accordance with local and national guidelines <http://www.fs.fed.us/foresthealth/monitoring/accuracyassessment.shtml>. Maps and data may be updated without notice. Please cite "USDA Forest Service, Forest Health Protection and its partners" as the source of this data in maps and publications.

Due to the nature of aerial surveys, the data on this map will only provide rough estimates of location, intensity and the resulting trend information for agents detectable from the air. Many of the most destructive diseases are not represented on this map because these agents are not detectable from aerial surveys. The data presented on this map should only be used as a partial indicator of insect and disease activity, and should be validated on the ground for actual location and causal agent. Shaded areas show locations where tree mortality or defoliation were apparent from the air. Intensity of damage is variable and not all trees in shaded areas are dead or defoliated. The insect and disease data represented on this map are available digitally from the USDA Forest Service, Region Two Forest Health Management group. The cooperators reserve the right to correct, update, modify or replace GIS products. Using this map for purposes other than those for which it was intended may yield inaccurate or misleading results.