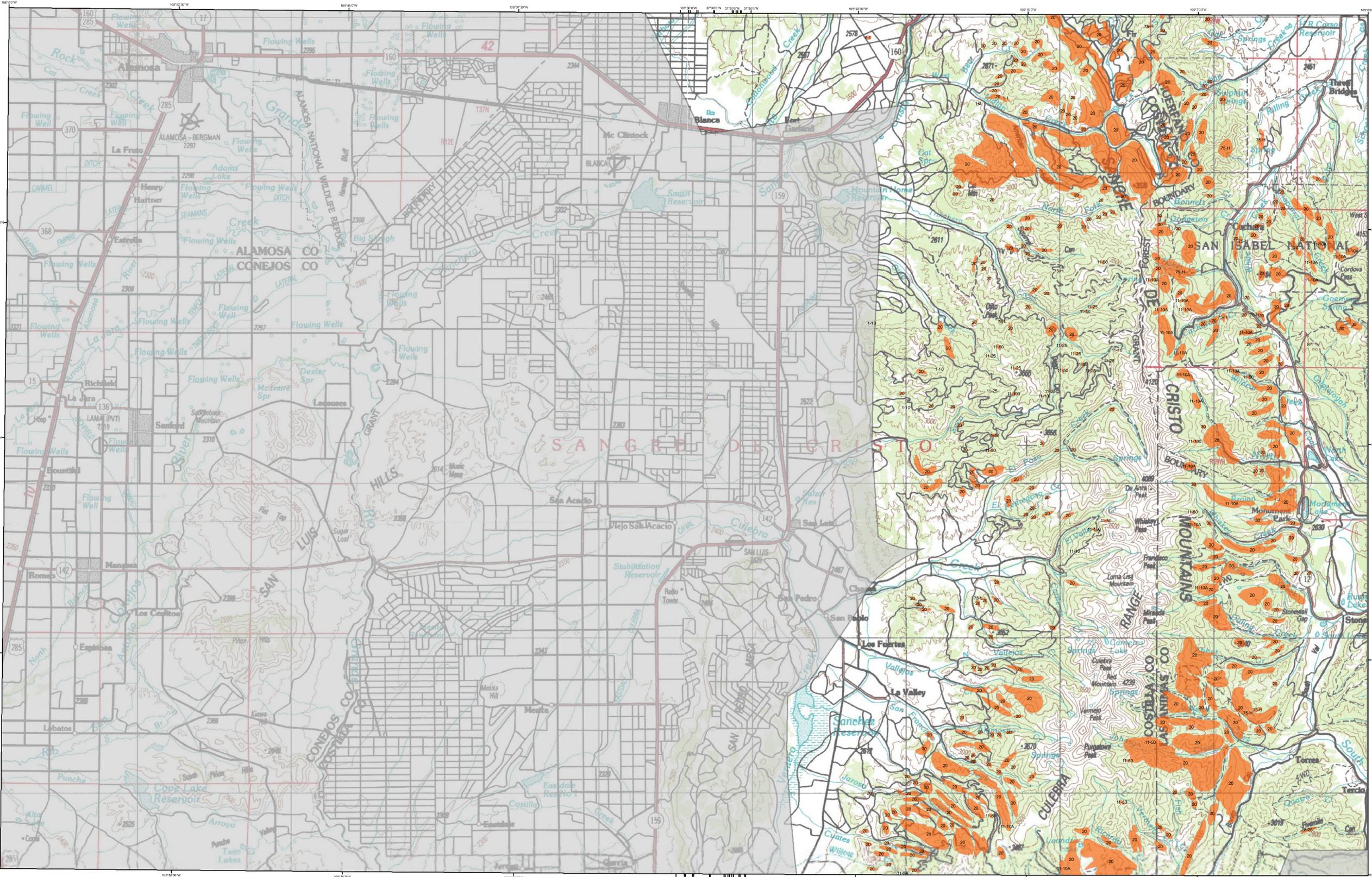


2010 Aerial Insect and Disease Survey Alamosa, Colorado USGS 100K TOPO!: 37105-A1



1:100,000

Legend

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 "ladder" trees in the polygon or point. When recent dead trees are not counted, an intensity code of L, M, or H 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 "ladder" 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 "ladder" 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 "ladder" tree. In another example: 5-2A = that on the average, an estimated three trees per acre are dead "ladder" trees. A "/" is used as a separator when a point/polygon has more than one causal agent code.

Code	Causal Agent(s)	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas fir beetle	Douglas-fir	49	Alouatta	Lodgepole Pine	100	fox squirrel flagging	Cottonwood/Poplar
2	Engelmann spruce beetle	Engelmann Spruce	50	White pine blister rust	Lodgepole Pine	107	fall webworm	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	51	Dwarf mistle	Softwoods	108	oak leaf	Softwoods
4	Mountain pine beetle	Lodgepole Pine	52	Elysiodes	Ponderosa Pine	109	pinewood nematode	Scotch Pine
5	Western pine beetle	Ponderosa Pine	53	Induleta	All Tree Species	110	oak wilt	Oak
6	White fir	Douglas-fir	54	Air pollutants	All Tree Species	111	foliage disease	All Tree Species
7	White fir	Douglas-fir	55	Chemical damage	All Tree Species	112	spurge iris	White Spruce
8	White fir	Douglas-fir	56	Loophole damage	Softwoods	113	leafhopper	Oak
9	White fir	Douglas-fir	57	Rhabdocline pseudotsugae	Douglas-fir	114	anthracnose like foliar disease	Bur Oak
10	White fir	Douglas-fir	58	Loophole damage	Softwoods	115	Dieback	All Tree Species
11	White fir	Douglas-fir	59	Leucosticta	Softwoods	116	Dieback	All Tree Species
12	White fir	Douglas-fir	60	Loophole damage	Softwoods	117	Dieback	All Tree Species
13	White fir	Douglas-fir	61	Cotryporia	Softwoods	118	Herpetosia	All Tree Species
14	White fir	Douglas-fir	62	Needle cast (Hypodermataceae)	Softwoods	119	Flagging	All Tree Species
15	White fir	Douglas-fir	63	Needle cast (Hypodermataceae)	Softwoods	120	apparent	Quaking Aspen
16	White fir	Douglas-fir	64	Needle cast (Hypodermataceae)	Softwoods	121	Mansonella Blight	Quaking Aspen
17	White fir	Douglas-fir	65	Needle cast (Hypodermataceae)	Softwoods	122	Dieback (ash)	Ash
18	White fir	Douglas-fir	66	Needle cast (Hypodermataceae)	Softwoods	123	Dieback (cottonwood)	Cottonwood/Poplar
19	White fir	Douglas-fir	67	Needle cast (Hypodermataceae)	Softwoods	200	Dieback (hardwood)	Hardwoods
20	White fir	Douglas-fir	68	Needle cast (Hypodermataceae)	Softwoods	210	Mortality (eastern cedar)	Eastern Red Cedar
21	White fir	Douglas-fir	69	Needle cast (Hypodermataceae)	Softwoods	211	Mortality (hardwood)	Hardwoods
22	White fir	Douglas-fir	70	Needle cast (Hypodermataceae)	Softwoods	212	Mortality (oak)	Oak
23	White fir	Douglas-fir	71	Needle cast (Hypodermataceae)	Softwoods	213	Mortality (spruce)	Spruce
24	White fir	Douglas-fir	72	Needle cast (Hypodermataceae)	Softwoods	220	Discoloration (ash)	Ash
25	White fir	Douglas-fir	73	Needle cast (Hypodermataceae)	Softwoods	221	Discoloration (cottonwood)	Softwoods
26	White fir	Douglas-fir	74	Needle cast (Hypodermataceae)	Softwoods	222	Discoloration (eastern cedar)	Eastern Red Cedar
27	White fir	Douglas-fir	75	Needle cast (Hypodermataceae)	Softwoods	223	Discoloration (oak)	Oak
28	White fir	Douglas-fir	76	Needle cast (Hypodermataceae)	Softwoods	224	Discoloration (spruce)	Spruce
29	White fir	Douglas-fir	77	Needle cast (Hypodermataceae)	Softwoods	230	Herpetosia (cottonwood)	Cottonwood/Poplar
30	White fir	Douglas-fir	78	Needle cast (Hypodermataceae)	Softwoods	231	Herpetosia (eastern cedar)	Eastern Red Cedar
31	White fir	Douglas-fir	79	Needle cast (Hypodermataceae)	Softwoods	240	Flagging (hardwood)	Hardwoods
32	White fir	Douglas-fir	80	Needle cast (Hypodermataceae)	Softwoods	250	Unidentified defoliator (cottonwood)	Cottonwood/Poplar
33	White fir	Douglas-fir	81	Needle cast (Hypodermataceae)	Softwoods	251	Unidentified defoliator (oak)	Oak
34	White fir	Douglas-fir	82	Needle cast (Hypodermataceae)	Softwoods	252	Unidentified defoliator (spruce)	Spruce
35	White fir	Douglas-fir	83	Needle cast (Hypodermataceae)	Softwoods	300	Mortality (pine)	Pine
36	White fir	Douglas-fir	84	Needle cast (Hypodermataceae)	Softwoods			
37	White fir	Douglas-fir	85	Needle cast (Hypodermataceae)	Softwoods			
38	White fir	Douglas-fir	86	Needle cast (Hypodermataceae)	Softwoods			
39	White fir	Douglas-fir	87	Needle cast (Hypodermataceae)	Softwoods			
40	White fir	Douglas-fir	88	Needle cast (Hypodermataceae)	Softwoods			
41	White fir	Douglas-fir	89	Needle cast (Hypodermataceae)	Softwoods			
42	White fir	Douglas-fir	90	Needle cast (Hypodermataceae)	Softwoods			
43	White fir	Douglas-fir	91	Needle cast (Hypodermataceae)	Softwoods			
44	White fir	Douglas-fir	92	Needle cast (Hypodermataceae)	Softwoods			
45	White fir	Douglas-fir	93	Needle cast (Hypodermataceae)	Softwoods			
46	White fir	Douglas-fir	94	Needle cast (Hypodermataceae)	Softwoods			
47	White fir	Douglas-fir	95	Needle cast (Hypodermataceae)	Softwoods			
48	White fir	Douglas-fir	96	Needle cast (Hypodermataceae)	Softwoods			
49	White fir	Douglas-fir	97	Needle cast (Hypodermataceae)	Softwoods			
50	White fir	Douglas-fir	98	Needle cast (Hypodermataceae)	Softwoods			
51	White fir	Douglas-fir	99	Needle cast (Hypodermataceae)	Softwoods			
52	White fir	Douglas-fir	100	Needle cast (Hypodermataceae)	Softwoods			
53	White fir	Douglas-fir	101	Needle cast (Hypodermataceae)	Softwoods			
54	White fir	Douglas-fir	102	Needle cast (Hypodermataceae)	Softwoods			
55	White fir	Douglas-fir	103	Needle cast (Hypodermataceae)	Softwoods			
56	White fir	Douglas-fir	104	Needle cast (Hypodermataceae)	Softwoods			
57	White fir	Douglas-fir	105	Needle cast (Hypodermataceae)	Softwoods			
58	White fir	Douglas-fir	106	Needle cast (Hypodermataceae)	Softwoods			
59	White fir	Douglas-fir	107	Needle cast (Hypodermataceae)	Softwoods			
60	White fir	Douglas-fir	108	Needle cast (Hypodermataceae)	Softwoods			
61	White fir	Douglas-fir	109	Needle cast (Hypodermataceae)	Softwoods			
62	White fir	Douglas-fir	110	Needle cast (Hypodermataceae)	Softwoods			
63	White fir	Douglas-fir	111	Needle cast (Hypodermataceae)	Softwoods			
64	White fir	Douglas-fir	112	Needle cast (Hypodermataceae)	Softwoods			
65	White fir	Douglas-fir	113	Needle cast (Hypodermataceae)	Softwoods			
66	White fir	Douglas-fir	114	Needle cast (Hypodermataceae)	Softwoods			
67	White fir	Douglas-fir	115	Needle cast (Hypodermataceae)	Softwoods			
68	White fir	Douglas-fir	116	Needle cast (Hypodermataceae)	Softwoods			
69	White fir	Douglas-fir	117	Needle cast (Hypodermataceae)	Softwoods			
70	White fir	Douglas-fir	118	Needle cast (Hypodermataceae)	Softwoods			
71	White fir	Douglas-fir	119	Needle cast (Hypodermataceae)	Softwoods			
72	White fir	Douglas-fir	120	Needle cast (Hypodermataceae)	Softwoods			
73	White fir	Douglas-fir	121	Needle cast (Hypodermataceae)	Softwoods			
74	White fir	Douglas-fir	122	Needle cast (Hypodermataceae)	Softwoods			
75	White fir	Douglas-fir	123	Needle cast (Hypodermataceae)	Softwoods			
76	White fir	Douglas-fir	124	Needle cast (Hypodermataceae)	Softwoods			
77	White fir	Douglas-fir	125	Needle cast (Hypodermataceae)	Softwoods			
78	White fir	Douglas-fir	126	Needle cast (Hypodermataceae)	Softwoods			
79	White fir	Douglas-fir	127	Needle cast (Hypodermataceae)	Softwoods			
80	White fir	Douglas-fir	128	Needle cast (Hypodermataceae)	Softwoods			
81	White fir	Douglas-fir	129	Needle cast (Hypodermataceae)	Softwoods			
82	White fir	Douglas-fir	130	Needle cast (Hypodermataceae)	Softwoods			
83	White fir	Douglas-fir	131	Needle cast (Hypodermataceae)	Softwoods			
84	White fir	Douglas-fir	132	Needle cast (Hypodermataceae)	Softwoods			
85	White fir	Douglas-fir	133	Needle cast (Hypodermataceae)	Softwoods			
86	White fir	Douglas-fir	134	Needle cast (Hypodermataceae)	Softwoods			
87	White fir	Douglas-fir	135	Needle cast (Hypodermataceae)	Softwoods			
88	White fir	Douglas-fir	136	Needle cast (Hypodermataceae)	Softwoods			
89	White fir	Douglas-fir	137	Needle cast (Hypodermataceae)	Softwoods			
90	White fir	Douglas-fir	138	Needle cast (Hypodermataceae)	Softwoods			
91	White fir	Douglas-fir	139	Needle cast (Hypodermataceae)	Softwoods			
92	White fir	Douglas-fir	140	Needle cast (Hypodermataceae)	Softwoods			
93	White fir	Douglas-fir	141	Needle cast (Hypodermataceae)	Softwoods			
94	White fir	Douglas-fir	142	Needle cast (Hypodermataceae)	Softwoods			
95	White fir	Douglas-fir	143	Needle cast (Hypodermataceae)	Softwoods			
96	White fir	Douglas-fir	144	Needle cast (Hypodermataceae)	Softwoods			
97	White fir	Douglas-fir	145	Needle cast (Hypodermataceae)	Softwoods			
98	White fir	Douglas-fir	146	Needle cast (Hypodermataceae)	Softwoods			
99	White fir	Douglas-fir	147	Needle cast (Hypodermataceae)	Softwoods			
100	White fir	Douglas-fir	148	Needle cast (Hypodermataceae)	Softwoods			

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 November 1 2010
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/fh/maerialsurvey/>

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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/aviation/qualityassurance.shtml>). Maps and data may be updated without notice. Please cite "USDA Forest Service, Forest Health Protection and its partners" as the source of the 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.