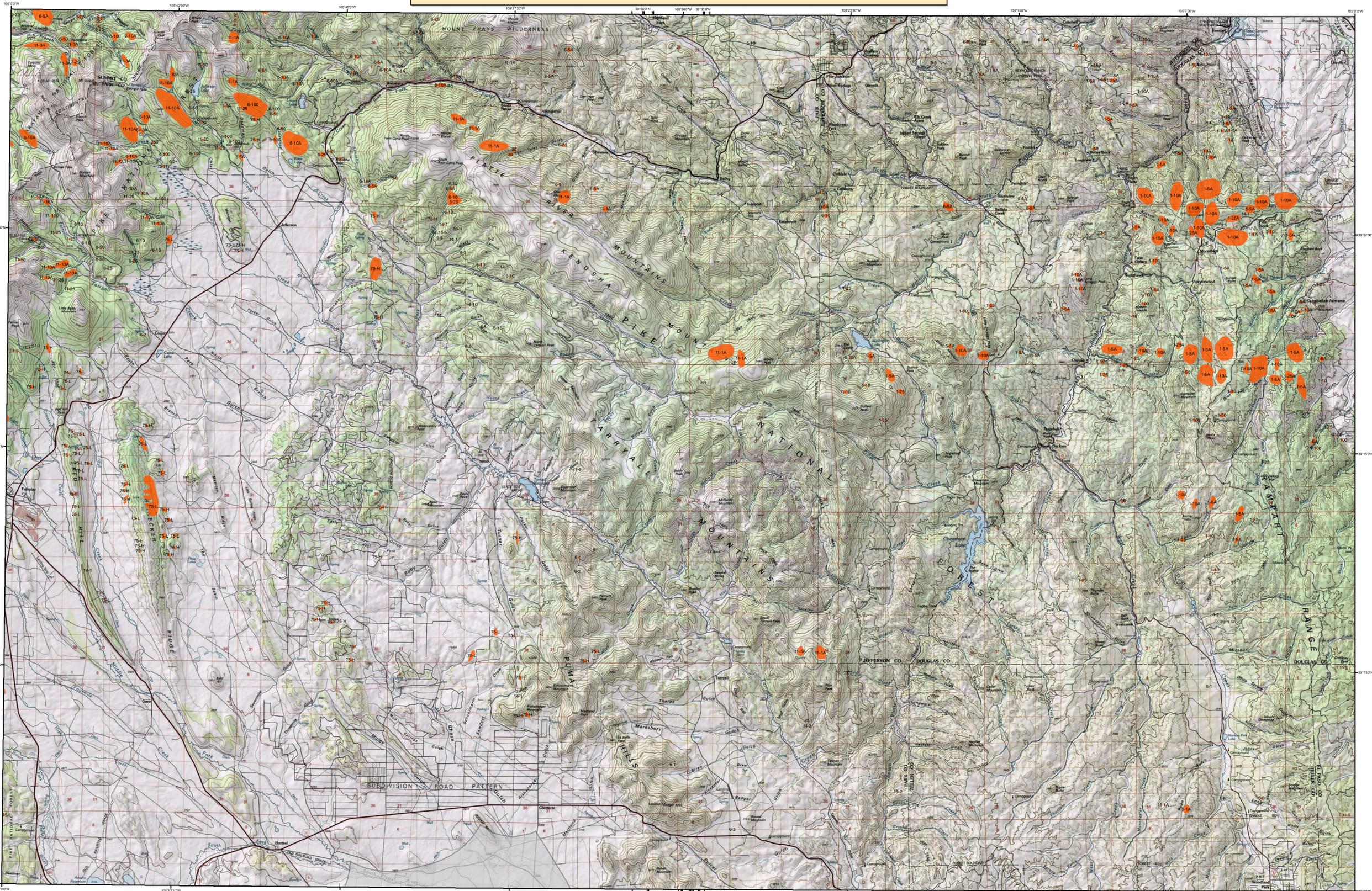
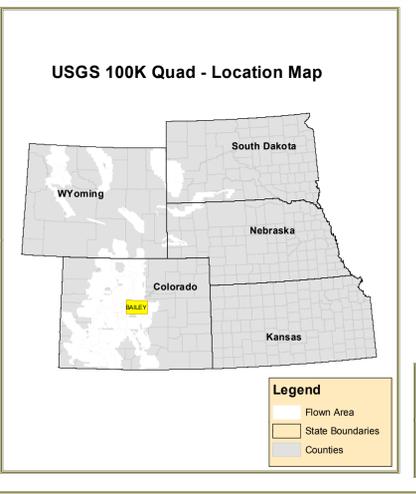


2011 Aerial Insect and Disease Survey Bailey, Colorado USGS 100K DRG: 39105-A1



1:100,000

Legend		Causal Agent(s)	Not Flown		
<p>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: 5-1/2A = 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 "/" is used as a separator when a point polygon has more than one causal agent code.</p>					
Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas fir beetle	Douglas fir	49	Atypical	Lodgepole Pine
2	Engelmann spruce beetle	Engelmann Spruce	50	Statactiform rust	Lodgepole Pine
3	Blue spruce ips	Blue Spruce	51	White pine blister rust	Softwoods
4	Mountain pine beetle	Ponderosa Pine	52	Dwarf mistletoe	Softwoods
5	Mountain pine beetle	Lodgepole Pine	53	Elysiades	Ponderosa Pine
6	Mountain pine beetle	Lodgepole Pine	54	Includes #65, #66 & #68	All Tree Species
7	Western pine beetle	Ponderosa Pine	55	Air pollutants	All Tree Species
8	Fire Enginer	White fir	56	Chemical damage	All Tree Species
9	Douglas fir engraver beetle	Douglas fir	57	Lophodermium pinastri	Softwoods
10	Western balsam bark beetle	Subalpine fir	58	Lophodermium concolor	Softwoods
11	Unidentified bark beetle	Softwoods	59	Lecanora acicola	Softwoods
12	Pine engraver	Lodgepole Pine	60	Lophodermium concolor	Softwoods
13	Pine engraver	Lodgepole Pine	61	Dofhinostoma pini	Softwoods
14	Ponderosa pine needle miner	Lodgepole Pine	62	Needle cast (Hymenometastoc)	Softwoods
15	Lodgepole pine needle miner	Ponderosa Pine	63	Root Rot	All Tree Species
16	Jack pine budworm	Jack Pine	64	Unidentified disease	Softwoods
17	Spruce budworm, light defol.	Douglas fir	65	Winter damage light	All Tree Species
18	Spruce budworm, medium defol.	Douglas fir	66	Winter damage medium	All Tree Species
19	Spruce budworm, heavy defol.	Douglas fir	67	Winter damage heavy	All Tree Species
20	Douglas fir bark moth	Douglas fir	68	Dipodia	Softwoods
21	Pine butterfly	Ponderosa Pine	69	Pinon bark scale	Common Pinon
22	Pine looper	Ponderosa Pine	70	Fire	All Tree Species
23	Pine tortrix	Hardwoods	71	Porcupine	Softwoods
24	Tent caterpillars	Hardwoods	72	Windthrow	All Tree Species
25	Leaf beetles	Hardwoods	73	High water damage	All Tree Species
26	Aspen defoliation	Quaking Aspen	74	Arachnids	Quaking Aspen
27	Oak leaf roller	Hardwoods	75	Aspen decline-multiple agents)	All Tree Species
28	Pine needle-shaft miner	Ponderosa Pine	76	Pinon pine mortality	Common Pinon
29	Pine sawflies	Ponderosa Pine	77	Juniper mortality-unknown agents)	Juniper
30	Pine bark scale	Ponderosa Pine	78	Camble oak decline-unknown agents)	Camble Oak
31	Carionworms	Hardwoods	79	Linear pine decline-multiple agents)	Linear Pine
32	Variable oak leaf caterpillar	Hardwoods	80	Hail damage	All Tree Species
33	Unidentified defoliator	All Tree Species	81	Unknown polygon	Unknown
34	Heliconia Decline/Mortality	Ponderosa Pine	82	Unknown Pinon	Common Pinon
35	Heliconia Decline/Mortality	Softwoods	83	Unknown Polygon	Lodgepole Pine
36	Amelarae setyae (Amelarae mellea)	Softwoods	84	road salt lip	Lodgepole Pine
37	Thromopsis	Softwoods	85	oak die-back disease	Elm
38	Cystospora	All Tree Species	86	dipodia blight	Ponderosa Pine
39	Western gall rust	Unknown	87	dipodia blight	Hardwoods
40	Domipoda rust	Unknown	88	drought thinned narrow leaf cottonwood	Narrowleaf Cottonwood
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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/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 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.