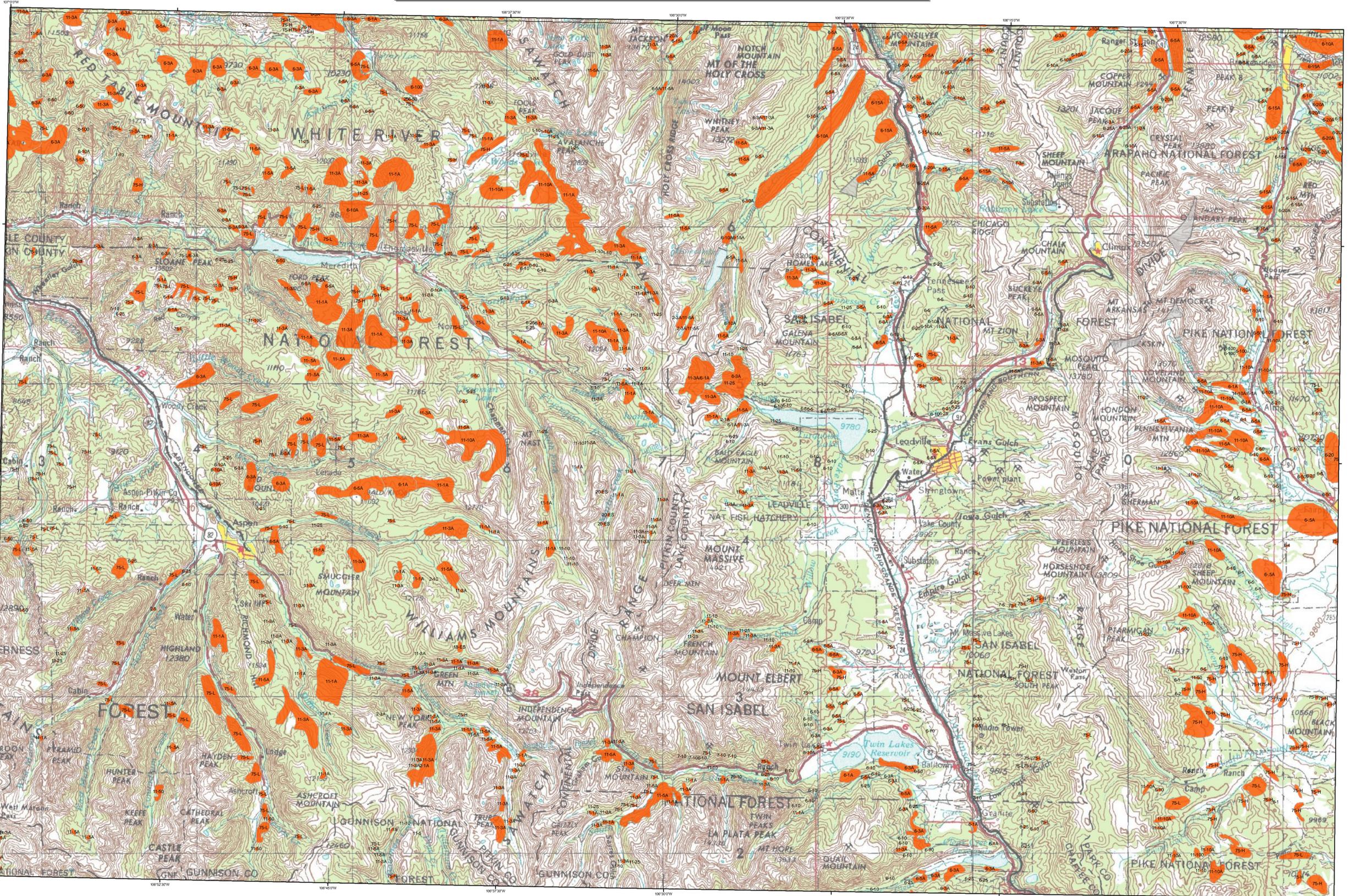


2008 Aerial Insect and Disease Survey Leadville, Colorado USGS 100K TOPO!: 39106-A1

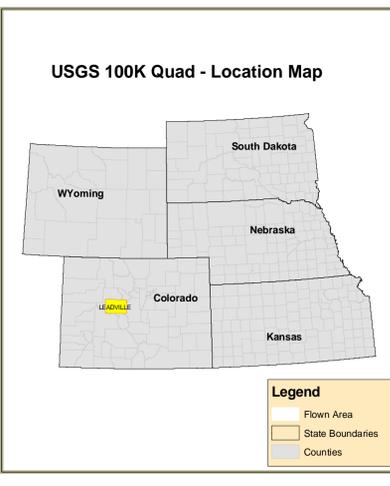
****DRAFT****

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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 "ladder" trees in the polygon or point. When record dead trees are not counted, an intensity code of Light, Moderate, and High may be used after the causal agent code. Periodically, trees per acreage estimates are used after the causal agent code instead of number of dead "ladder" trees (or an intensity code). For example: 5-125A = 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: 5-3A = 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.</p>					
Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
01	Douglas beetle	Douglas Fir	01	Aspen	Lodgepole Pine
02	Engelmann Spruce Beetle	Engelmann Spruce	02	White pine blister rust	5-Needle Pine
03	Mountain pine beetle	Lodgepole Pine	03	Dwarf mistletoe	Softwoods
04	Mountain pine beetle	5-Needle Pine	04	Eurostoma	Ponderosa Pine
05	Western pine beetle	Ponderosa Pine	05	Includes #95, 95 & 95	All Tree Species
06	White Fir Engraver	White Fir	06	Air pollution	All Tree Species
07	Douglas fir engraver beetle	Douglas Fir	07	Chemical damage	All Tree Species
08	Western balsam bark beetle	Subsaginare Fir	08	Lophodermium pinastri	Softwoods
09	Unidentified bark beetle	Softwoods	09	Rhabdocarpus pseudoglyptus	Douglas Fir
10	Pine engraver	Lodgepole Pine	10	Lophodermium arcutata	Softwoods
11	Pine engraver	Ponderosa Pine	11	Leucostoma acicola	Softwoods
12	Ponderosa pine needle miner	Lodgepole Pine	12	Lophodermium concolor	Softwoods
13	Lodgepole pine needle miner	Ponderosa Pine	13	Dufrenoyia sp.	Softwoods
14	Jack pine budworm	Jack Pine	14	Needle cast (hypodermataceae)	All Tree Species
15	Spruce budworm, light defol.	Douglas Fir	15	Root Rot	Softwoods
16	Spruce budworm, medium defol.	Douglas Fir	16	Unidentified disease	All Tree Species
17	Spruce budworm, heavy defol.	Douglas Fir	17	Winter damage light	All Tree Species
18	Douglas fir tussock moth	Douglas Fir	18	Winter damage medium	All Tree Species
19	Pine Butterfly	Ponderosa Pine	19	Winter damage heavy	All Tree Species
20	Text caterpillars	Ponderosa Pine	20	Diptera	Softwoods
21	Pine tortrix	Ponderosa Pine	21	Prionus bark stain	Common Pinon
22	Oak leaf roller	Hardwoods	22	Fire	All Tree Species
23	Pine sawflies	Lodgepole Pine	23	Fire	All Tree Species
24	Pine tussock moth	Ponderosa Pine	24	Fire	All Tree Species
25	Caterpillars	Hardwoods	25	Fire	All Tree Species
26	Variable oak leaf caterpillar	Hardwoods	26	Fire	All Tree Species
27	Unidentified defoliator	All Tree Species	27	Fire	All Tree Species
28	Heterodermoid annosus	Softwoods	28	Fire	All Tree Species
29	Armillaria ostroyae (Armillaria mellea)	Softwoods	29	Fire	All Tree Species
30	Polytopus arbutus	Softwoods	30	Fire	All Tree Species
31	Cytospora	All Tree Species	31	Fire	All Tree Species
32	Western gall rust	Unknown	32	Fire	All Tree Species
33	Concordia rust	Lodgepole Pine	33	Fire	All Tree Species
34	Stainform rust	Lodgepole Pine	34	Fire	All Tree Species



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 will have 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.

Area surveyed by Map Created:
Projection: UTM NAD83 Zone 13
Author: J. Ross, USDA Forest Service

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DISCLAIMER

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.

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/>