

2006 Aerial Insect and Disease Survey Newcastle, Wyoming USGS 100K TOPO! 43104-E1



1:100,000

Legend		Causal Agent(s)		Not Flown in 2006	
<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 "fader" 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 acreage estimates are used after the causal agent code instead of number of dead "fader" trees (or an intensity code). For example: 5-10A = The first number before the dash is the causal agent code. The number after the dash is an estimation of the number of dead "fader" 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 "fader" tree. In another example: 5-3A = that on the average, an estimated three trees per acre are dead "fader" 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	47	Anisoplia	Lodgepole Pine
2	Engelmann Spruce Beetle	Engelmann Spruce	50	White pine blister rust	S-Needle Pine
3	Mountain pine beetle	Ponderosa Pine	51	Dwarf mistletoe	Softwoods
4	Mountain pine beetle	Lodgepole Pine	52	Elysirodes	Ponderosa Pine
5	Mountain pine beetle	S-Needle Pine	53	Includes #50, 55 & 59	All Tree Species
6	Western pine beetle	Ponderosa Pine	54	Air pollutants	All Tree Species
7	Fire Engorgener	White Fir	55	Chemical damage	All Tree Species
8	Douglas-fir engraver beetle	Douglas-fir	56	Lophodermium piceati	Softwoods
9	Western balsam bark beetle	Subalpine Fir	57	Rhabdocline pseudotsugae	Douglas-fir
10	Unidentified bark beetle	Softwoods	58	Lophodermium arcutum	Softwoods
11	Fire engraver	Lodgepole Pine	59	Leucosticte axiozona	Softwoods
12	Unidentified bark beetle	Ponderosa Pine	60	Lophodermium concolor	Softwoods
13	Fire engraver	Lodgepole Pine	61	Daktisnopia pini	Softwoods
14	Pine engraver	Ponderosa Pine	62	Needle cast (Hypodermataceae)	All Tree Species
15	Ponderosa pine needle miner	Lodgepole Pine	63	Root Rot	Softwoods
16	Lodgepole pine needle miner	Ponderosa Pine	64	Unidentified disease	All Tree Species
17	Jack pine budworm	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	Winter damage heavy	All Tree Species
21	Douglas-fir tussock moth	Douglas-fir	69	Juniper black stain	Softwoods
22	Pine butterfly	Ponderosa Pine	70	Fire	All Tree Species
23	Tree hopper	Ponderosa Pine	71	Fireweed	Common Pinon
24	Tree hopper	Ponderosa Pine	72	Windthrow	All Tree Species
25	Leaf beetles	Hardwoods	73	High water damage	All Tree Species
26	Oak leaf roller	Hardwoods	74	Avallanche	All Tree Species
27	Pine needle-sheath miner	Ponderosa Pine	75	Aspen decline-multiple agents)	Quaking Aspen
28	Pine sawflies	Ponderosa Pine	76	Pinon pine mortality	Common Pinon
29	Variable oak leaf caterpillar	Hardwoods	77	Juniper mortality-unknown agents)	Juniper
30	Unidentified defoliator	Hardwoods	78	Gambel Oak	Gambel Oak
31	Heterobasidion annosum (Fomes annosus)	Softwoods	79	Limber pine decline-multiple agents)	Limber Pine
32	Amelara tostopae (Amelara melae)	Softwoods	80	Hail damage	All Tree Species
33	Polygonus schweinfelti	Softwoods	81	Unknown polygon	Common Pinon
34	Thomopsis	Softwoods	100	old pinon mortality	Lodgepole Pine
35	Cytospora	All Tree Species	101	road salt sp	Elm
36	Western gall rust	Unknown	102	dutch elm disease	Ponderosa Pine
37	Conidiu rust	Unknown	103	spidula blight	Spruce, White Spruce
38	Stalactiform rust	Lodgepole Pine	104	Isis Juniper	Juniper
			105	drought killed narrow leaf cottonwood	Narrowleaf Cottonwood



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.

Area surveyed by Bill Schaupp & Al Dymerski 08/21 - 08/24 2006
Map Created: 01/12/2007
Projection: UTM NAD83 Zone 13
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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/>