

2005 Aerial Insect and Disease Survey Baggs, Wyoming USGS 100K TOPO! 41107-A1

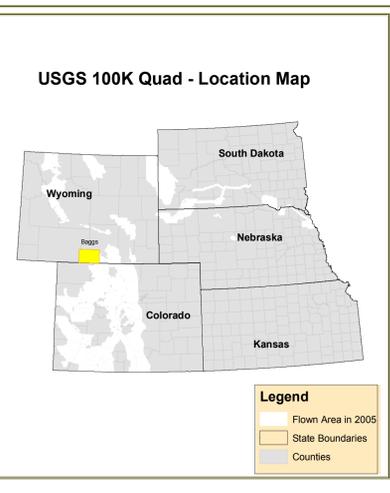


1:100,000

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 "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: 5-12A = The first number before the dash is the causal agent code. The number after the dash is an estimation of the number of dead "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.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas-fir beetle	Douglas-fir	100	For squirrel flagging	Cottonwood/Poplar			
2	Engelmann Spruce Beetle	Engelmann Spruce	107	fall webworm	Cottonwood/Poplar			
3	Mountain pine beetle	Ponderosa Pine	108	road salt	Cottonwood/Poplar			
4	Mountain pine beetle	Lodgepole Pine	109	pinewood nematode	Scotch Pine			
5	Mountain pine beetle	5-Needle Pine	110	oak wilt	Oak			
6	Western pine beetle	Ponderosa Pine	111	foliage disease	All Tree Species			
7	Fire Engrafer	White Fir	112	spruce Ips	White Spruce			
8	Douglas-fir engraver beetle	Douglas-fir	113	hearted chestnut borer	Oak			
9	Western balsam bark beetle	Subalpine Fir	114	anthracnose like foliar disease	Bur Oak			
10	Pine engraver	Lodgepole Pine	115	Dieback	All Tree Species			
11	Pine engraver	Softwoods	116	Mortality	All Tree Species			
12	Pine engraver	Ponderosa Pine	117	Discoloration	All Tree Species			
13	Pine engraver	Lodgepole Pine	118	Herbicide	All Tree Species			
14	Pine engraver	Ponderosa Pine	119	Flagging	All Tree Species			
15	Ponderosa pine needle miner	Lodgepole Pine	120	aspen tortrix	Quaking Aspen			
16	Ponderosa pine needle miner	Ponderosa Pine	121	Mesosoma blight	Quaking Aspen			
17	Jack pine budworm	Jack Pine	200	Dieback (ash)	Ash			
18	Spruce budworm, light defol.	Douglas-fir	201	Dieback (cottonwood)	Cottonwood/Poplar			
19	Spruce budworm, medium defol.	Douglas-fir	202	Dieback (hardwood)	Hardwoods			
20	Spruce budworm, heavy defol.	Douglas-fir	204	Dieback (oak)	Oak			
21	Douglas-fir tussock moth	Douglas-fir	210	Mortality (old cottonwood)	Cottonwood/Poplar			
22	Pine butterfly	Ponderosa Pine	211	Mortality (eastern cedar)	Eastern Red Cedar			
23	Pine looper	Ponderosa Pine	214	Mortality (spruce)	Spruce			
24	Tart caterpillars	Hardwoods	220	Discoloration (ash)	Ash			
25	Leaf leaftier	Hardwoods	221	Discoloration (conifer)	Softwoods			
26	Pine needle-shaft miner	Ponderosa Pine	222	Discoloration (cottonwood)	Cottonwood/Poplar			
27	Pine sawfly	Ponderosa Pine	223	Discoloration (eastern cedar)	Eastern Red Cedar			
28	Variable oak leaf caterpillar	Hardwoods	224	Discoloration (hardwood)	Hardwoods			
29	Cankerworms	All Tree Species	225	Discoloration (oak)	Oak			
30	Unidentified defoliator	All Tree Species	226	Discoloration (spruce)	Spruce			
31	Heterodactylon annosum (Fomes annosus)	Softwoods	230	Herbicide (cottonwood)	Cottonwood/Poplar			
32	Armillaria ostroyae (Armillaria mellea)	Softwoods	231	Herbicide (eastern cedar)	Eastern Red Cedar			
33	Polygonus sawnflies	Softwoods	232	Flagging (hardwood)	Hardwoods			
34	Phanoxia	All Tree Species	233	Unidentified defoliator (cottonwood)	Cottonwood/Poplar			
35	Cytophora	Unknown	234	Unidentified defoliator (elm)	Elm			
36	Western gall rust	Unknown	250	Unidentified defoliator (hardwood)	Hardwoods			
37	Comandra rust	Lodgepole Pine	300	Mortality (pine)	Pine			
38	Shiitake rust	Lodgepole Pine						



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 differences 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 Erik Johnson & Bob Cain 7/11 - 7/15 2005
Map Created: 01-06
Projection: UTM NAD83 Zone 13
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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/>