

2006 Aerial Insect and Disease Survey Sheridan, Wyoming USGS 100K TOPO!: 44106-E1

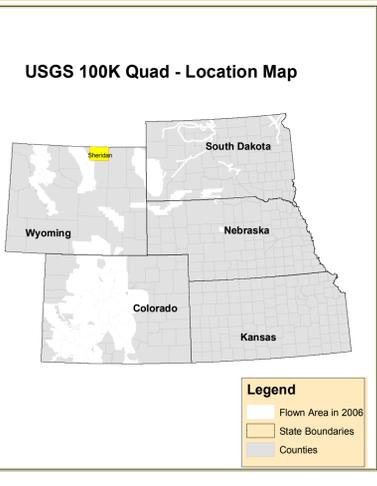


1:100,000

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, 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 "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: 5-25A = that on the average, an estimated three trees per acre are dead "fader" trees. A "J" 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
1	Douglas-fir weevil	Douglas-fir	107	tenacious flaggig	Cottonwood/Poplar
2	Engelmann spruce beetle	Engelmann spruce	107	fall weevorn	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	108	road salt	Softwoods
4	Mountain pine beetle	Lodgepole Pine	109	grassroot nematode	Scots Pine
5	Mountain pine beetle	5-Needle Pine	110	oak wilt	Oak
6	Mountain pine beetle	Ponderosa Pine	111	foliage disease	All Tree Species
7	White fir	All Tree Species	112	spruce Ips	White Spruce
8	White fir	All Tree Species	113	twined chestnut borer	Bur Oak
9	White fir	All Tree Species	114	anthracnose like foliar disease	All Tree Species
10	Douglas-fir engraver beetle	Softwoods	115	Dieback	All Tree Species
11	Western balsam bark beetle	Softwoods	116	Dieback	All Tree Species
12	Undersified bark beetle	Softwoods	117	Discoloration	All Tree Species
13	Pine engraver	Lodgepole Pine	118	Mortality	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	Lodgepole pine needle miner	Ponderosa Pine	121	Mesquona Blight	Quaking Aspen
17	Jack pine budworm	Jack Pine	200	Dieback (ash)	Ash
18	Spruce budworm, light defol.	Douglas-fir	202	Dieback (hardwood)	Hardwoods
19	Spruce budworm, medium defol.	Douglas-fir	204	Dieback (oak)	Oak
20	Spruce budworm, heavy defol.	Douglas-fir	210	Mortality (oak)	Oak
21	Douglas-fir tussock moth	Douglas-fir	211	Mortality (eastern cedar)	Eastern Red Cedar
22	Pine butterfly	Ponderosa Pine	212	Mortality (spruce)	Softwoods
23	Pine looper	Ponderosa Pine	213	Mortality (oak)	Oak
24	Pine tortrix	Ponderosa Pine	214	Mortality (spruce)	Softwoods
25	Tree caterpillars	Hardwoods	220	Discoloration (ash)	Ash
26	Leaf beetles	Hardwoods	221	Discoloration (conifer)	Softwoods
27	Oak leaf miner	Hardwoods	222	Discoloration (cottonwood)	Cottonwood/Poplar
28	Pine needle-shaft miner	Ponderosa Pine	223	Discoloration (eastern cedar)	Eastern Red Cedar
29	Pine sawflies	Ponderosa Pine	224	Discoloration (hardwood)	Hardwoods
30	Pine sawflies	Hardwoods	225	Discoloration (oak)	Oak
31	Cankworms	Hardwoods	226	Discoloration (spruce)	Spruce
32	Variable oak leaf caterpillar	Hardwoods	227	Herbicide (cottonwood)	Cottonwood/Poplar
33	Undersified defoliator	All Tree Species	231	Herbicide (eastern cedar)	Eastern Red Cedar
34	Herbivorous annosum (Formos annosus)	Softwoods	232	Herbicide (hardwood)	Hardwoods
35	Amelara estrova (Amelara melae)	Softwoods	250	Undersified defoliator (cottonwood)	Cottonwood/Poplar
36	Polyphorus schweinfelti	Softwoods	251	Undersified defoliator (elm)	Elm
37	Phonopora	All Tree Species	101	road salt top	Hardwoods
38	Cytospora	Unknown	102	dutch elm disease	Ponderosa Pine
39	Western gall rust	Unknown	103	dieback blight	Spruce, White Spruce
40	Conioidia rust	Lodgepole Pine	104	los hardart	Narrowleaf Cottonwood
41	Stalactiforme rust	Lodgepole Pine	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 Erik Johnson & Al Dymerski 07/18 - 07/21 2006
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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/>