

2005 Aerial Insect and Disease Survey Cody, Nebraska USGS 100K DRG: 42101-E1



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 "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. Periodicity, trees per acreage estimates are used after the causal agent code instead of number of dead "faded" 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 "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.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas-fir beetle	Douglas-fir	49	Altricketia	Lodgepole Pine	100	fox squirrel foraging	Cottonwood/Poplar
2	Engelmann Spruce Beetle	Engelmann Spruce	50	White pine blister rust	5-Needle Pine	107	fall webworm	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	51	Deer tick	Softwoods	109	road kill	Softwoods
4	Mountain pine beetle	Lodgepole Pine	52	Elytrodema	Ponderosa Pine	109	pinewood nematode	Scotch Pine
5	Mountain pine beetle	5-Needle Pine	53	Inclusa #05, 06 & 09	All Tree Species	110	oak wilt	Oak
6	Western pine beetle	Ponderosa Pine	54	Air pollutants	All Tree Species	111	soilage disease	All Tree Species
7	Fire Engiever	White Fir	55	Chemical damage	All Tree Species	112	spruce ips	White Spruce
8	Douglas-fir engraver beetle	Douglas-fir	56	Lophodermium pinastri	Softwoods	113	larched crownrot borer	Oak
9	Fire Engiever	Subalpine Fir	57	Rhabdocline pseudotsugae	Douglas-fir	114	anthracnose like foliar disease	Bur Oak
10	Douglas-fir engraver beetle	Subalpine Fir	58	Lophodermium arcuta	Softwoods	115	Dieback	All Tree Species
11	Western balsam bark beetle	Unidentified bark beetle	59	Lecanostoma acicola	Softwoods	116	Mortality	All Tree Species
12	Unidentified bark beetle	Softwoods	60	Lophodermium concolor	Softwoods	117	Discoloration	All Tree Species
13	Pine engraver	Lodgepole Pine	61	Dobsonia	Softwoods	118	Herpetice	All Tree Species
14	Pine engraver	Ponderosa Pine	62	Needle cast (Hypodermataceae)	Softwoods	119	Flagging	All Tree Species
15	Ponderosa pine needle miner	Lodgepole Pine	63	Floor Rot	Softwoods	120	aspen tortix	Quaking Aspen
16	Lodgepole pine needle miner	Ponderosa Pine	64	Unidentified disease	All Tree Species	121	Matsucoria Bright	Oak
17	Jack pine budworm	Jack Pine	65	Winter damage light	All Tree Species	200	Dieback (oak)	Ash
18	Spruce budworm, light defol.	Douglas-fir	66	Winter damage medium	All Tree Species	201	Dieback (cottonwood)	Cottonwood/Poplar
19	Spruce budworm, medium defol.	Douglas-fir	67	Winter damage heavy	All Tree Species	202	Dieback (hardwood)	Hardwoods
20	Spruce budworm, heavy defol.	Douglas-fir	68	Diploida	Softwoods	204	Dieback (oak)	Oak
21	Douglas-fir tussock moth	Douglas-fir	69	Pinjion black stain	Common Pinjion	210	Mortality (old cottonwood)	Cottonwood/Poplar
22	Douglas-fir tussock moth	Ponderosa Pine	70	Fire	All Tree Species	211	Mortality (eastern cedar)	Eastern Red Cedar
23	Pine butterfly	Ponderosa Pine	71	Fire	Softwoods	212	Mortality (hardwood)	Hardwoods
24	Pine needle-sheath miner	Ponderosa Pine	72	Windthrow	All Tree Species	213	Mortality (oak)	Oak
25	Pine needle-sheath miner	Hardwoods	73	High water damage	All Tree Species	214	Mortality (spruce)	Spruce
26	Tent caterpillar	Hardwoods	74	Avalanche	All Tree Species	220	Discoloration (ash)	Ash
27	Leaf beetles	Hardwoods	75	Aspen decline-multiple agents)	Common Pinjion	221	Discoloration (cotton)	Softwoods
28	Oak leaf roller	Hardwoods	76	Juniper pine mortality	Common Pinjion	222	Discoloration (cottonwood)	Cottonwood/Poplar
29	Pine needle-sheath miner	Ponderosa Pine	77	Juniper mortality-unknown agents)	Juniper	223	Discoloration (eastern cedar)	Eastern Red Cedar
30	Pine sawflies	Ponderosa Pine	78	Quaking Aspen	Gambel Oak	224	Discoloration (hardwood)	Hardwoods
31	Pine tussock moth	Ponderosa Pine	79	Limber pine decline-multiple agents)	Limber Pine	225	Discoloration (oak)	Oak
32	Carlikerworms	Hardwoods	80	Nail damage	All Tree Species	226	Discoloration (spruce)	Spruce
33	Variable oak leaf caterpillar	Hardwoods	81	Unknown polygon	Unknown	230	Herpetice (cottonwood)	Cottonwood/Poplar
34	Variable oak leaf caterpillar	All Tree Species	100	old pinion mortality	Common Pinjion	231	Herpetice (eastern cedar)	Eastern Red Cedar
35	Heterobasidion annosum (Fomes annosus)	Softwoods	101	road salt top	Lodgepole Pine	240	Flagging (hardwood)	Hardwoods
36	Armillaria ostoyae (Armillaria mellea)	Softwoods	102	subn elm disease	Elm	250	Unidentified defoliator (cottonwood)	Cottonwood/Poplar
37	Polygonus sawentzii	Softwoods	103	spotted knight	Ponderosa Pine	251	Unidentified defoliator (elm)	Elm
38	Phytophthora	All Tree Species	104	les hunteri	Spruce, White Spruce	252	Unidentified defoliator (hardwood)	Hardwoods
39	Western gall rust	Unknown	105	drought killed narrow leaf cottonwood	Narrowleaf Cottonwood	300	Mortality (pine)	Pine
40	Commanda rust	Lodgepole Pine						
41	Stactaform rust	Lodgepole Pine						

USGS 100K Quad - Location Map



Legend	
[Yellow box]	Flown Area in 2005
[Red line]	State Boundaries
[Blue line]	Counties

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 Schapp & Al Dymerski 9/12 - 9/14 2005
Map Created: 01-06
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/>