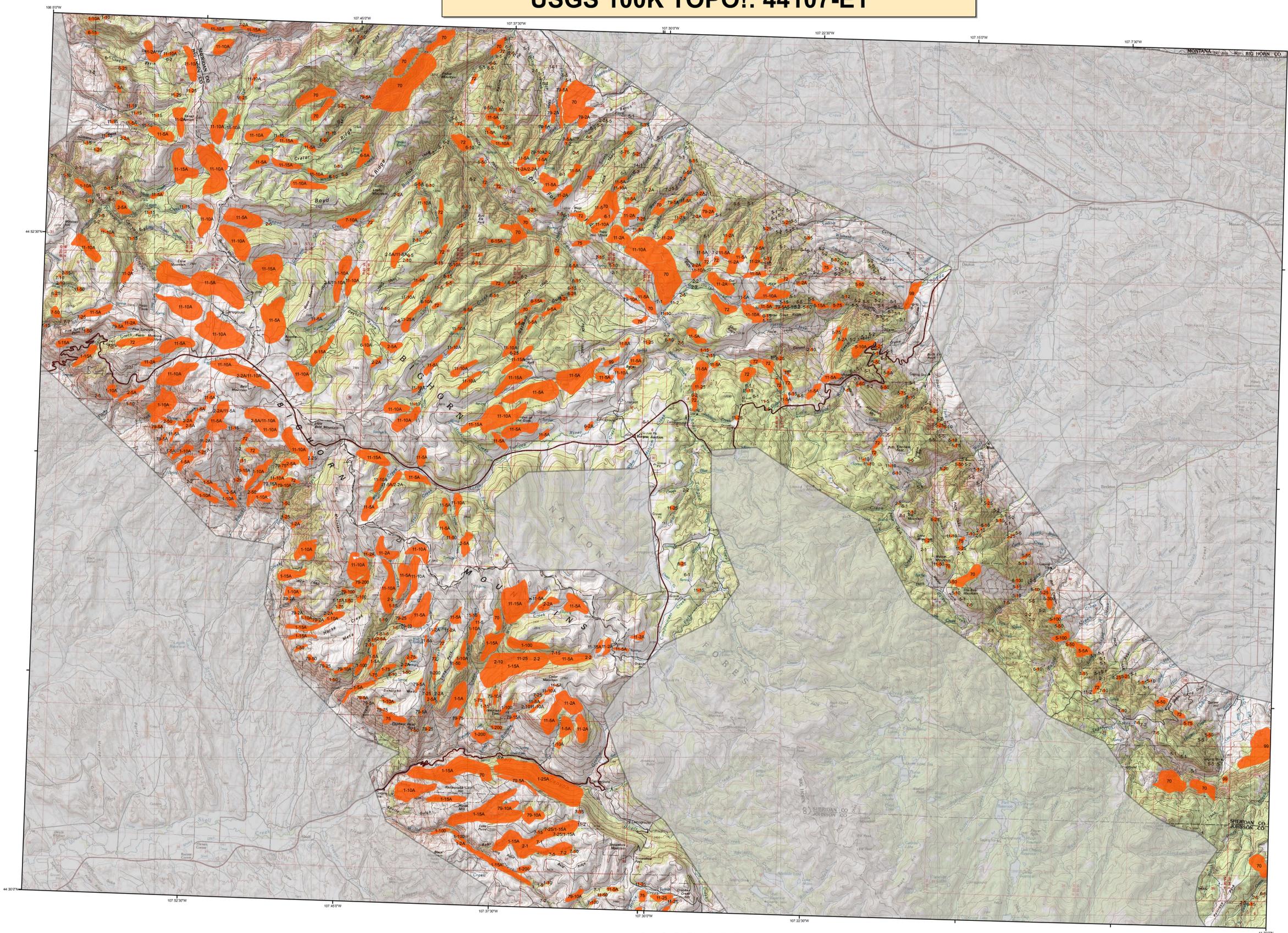


2007 Aerial Insect and Disease Survey Burgess Junction, Wyoming USGS 100K TOPO!: 44107-E1



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-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.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas-fir beetle	Douglas-fir	49	Antrax	Lodgepole Pine	105	fox squirrel flagging	Cottonwood/Poplar
2	Engelmann spruce beetle	Engelmann Spruce	50	White pine blister rust	White Pine	107	fall webworm	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	51	Dwarf mistle	Softwoods	108	road kill	Softwoods
4	Mountain pine beetle	Lodgepole Pine	52	Elysiaca	Ponderosa Pine	109	sheephead nematode	Softwood
5	Mountain pine beetle	White Pine	53	Insects #65, 66 & 69	All Tree Species	110	oak wilt	Oak
6	Western pine beetle	Ponderosa Pine	54	Air pollutants	All Tree Species	111	foliage disease	All Tree Species
7	White Pine	White Pine	55	Chemical damage	All Tree Species	112	spice loss	White Spruce
8	Western pine beetle	White Pine	56	Lophodermium pinastri	Softwoods	113	two-lined chestnut borer	Oak
9	White Pine	White Pine	57	Rhabdocline pseudotsugae	Softwoods	114	ambrosia like foliar disease	Blue Oak
10	Douglas-fir engraver beetle	Douglas-fir	58	Lophodermium arcuta	Softwoods	115	Diaback	All Tree Species
11	Western larch bark beetle	Subalpine Fir	59	Lecanostoma acicola	Softwoods	116	Mortality	All Tree Species
12	Unidentified bark beetle	Softwoods	60	Lophodermium opercular	Softwoods	117	Discoloration	All Tree Species
13	Pine engraver	Lodgepole Pine	61	Dothioroma pin	Softwoods	118	Herbicide	All Tree Species
14	Pine engraver	Lodgepole Pine	62	Heavily cast (Hypodemateae)	Softwoods	119	Flagging	Quaking Aspen
15	Ponderosa pine needle miner	Lodgepole Pine	63	Root Rot	All Tree Species	120	aspen tortix	Quaking Aspen
16	Lodgepole pine needle miner	Ponderosa Pine	64	Unidentified disease	Softwoods	121	Marsdenia blight	Quaking Aspen
17	Jack pine budworm	Jack Pine	65	Winter damage light	All Tree Species	200	Diaback (ash)	Ash
18	Spruce budworm, light defol.	Douglas-fir	66	Winter damage medium	All Tree Species	201	Diaback (cottonwood)	Cottonwood/Poplar
19	Spruce budworm, heavy defol.	Douglas-fir	67	Winter damage heavy	All Tree Species	202	Diaback (hardwood)	Hardwoods
20	Spruce budworm, heavy defol.	Douglas-fir	68	Diploida	Oak	204	Mortality (oak)	Oak
21	Douglas-fir bark beetle	Douglas-fir	69	Prionus black stain	All Tree Species	211	Mortality (eastern cedar)	Eastern Red Cedar
22	Pine tortrix	Ponderosa Pine	70	Fire	All Tree Species	212	Mortality (hardwood)	Oak
23	Pine tortrix	Ponderosa Pine	71	Fluoropine	Softwoods	214	Mortality (spruce)	Spruce
24	Leaf beetles	Hardwoods	72	Windthrow	All Tree Species	220	Discoloration (oak)	Oak
25	Oak leaf roller	Hardwoods	73	High water damage	All Tree Species	221	Discoloration (eastern cedar)	Eastern Red Cedar
26	Pine needle-shaft miner	Ponderosa Pine	74	Avellanea	Softwoods	222	Discoloration (hardwood)	Hardwoods
27	Pine sawflies	Ponderosa Pine	75	Aspen decline-multiple agents)	Quaking Aspen	223	Discoloration (eastern cedar)	Eastern Red Cedar
28	Pine sawback moth	Ponderosa Pine	76	Prionus mortality	Common Prionus	224	Discoloration (hardwood)	Oak
29	Unidentified defoliator	Hardwoods	77	Prionus mortality (unknown agents)	Juniper	225	Discoloration (spruce)	Spruce
30	Variable oak leaf caterpillar	Hardwoods	78	Gambel oak decline-unknown agents)	Gambel Oak	226	Discoloration (oak)	Oak
31	Unidentified defoliator	All Tree Species	79	Limber pine decline-multiple agents)	Limber Pine	227	Discoloration (eastern cedar)	Eastern Red Cedar
32	Heterobasidion annosum (Fomes annosus)	Softwoods	80	Hail damage	All Tree Species	228	Discoloration (spruce)	Spruce
33	Armillaria ostoyae (Armillaria mellea)	Softwoods	81	Unknown polygon	Unknown	230	Herbicide (cottonwood)	Cottonwood/Poplar
34	Popovirus schweinfurthi	Softwoods	82	Unknown polygon	Unknown	231	Herbicide (eastern cedar)	Eastern Red Cedar
35	Phomopsis	Softwood	101	road salt tip	Lodgepole Pine	240	Flagging (hardwood)	Cottonwood/Poplar
36	Cytospora	All Tree Species	102	oak em disease	Birch	250	Unidentified defoliator (cottonwood)	Cottonwood/Poplar
37	Western oak rust	Unknown	103	Spotted light	Ponderosa Pine	251	Unidentified defoliator (elm)	Elm
38	Comandra rust	Unknown	104	Ice damage	Spruce, White Spruce	252	Unidentified defoliator (hardwood)	Hardwoods
39	Stactaform rust	Lodgepole Pine	105	drought killed narrow leaf cottonwood	Narrowleaf Cottonwood	300	Mortality (pine)	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 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 Les Koch
Map Created: 12/12/2007
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/>