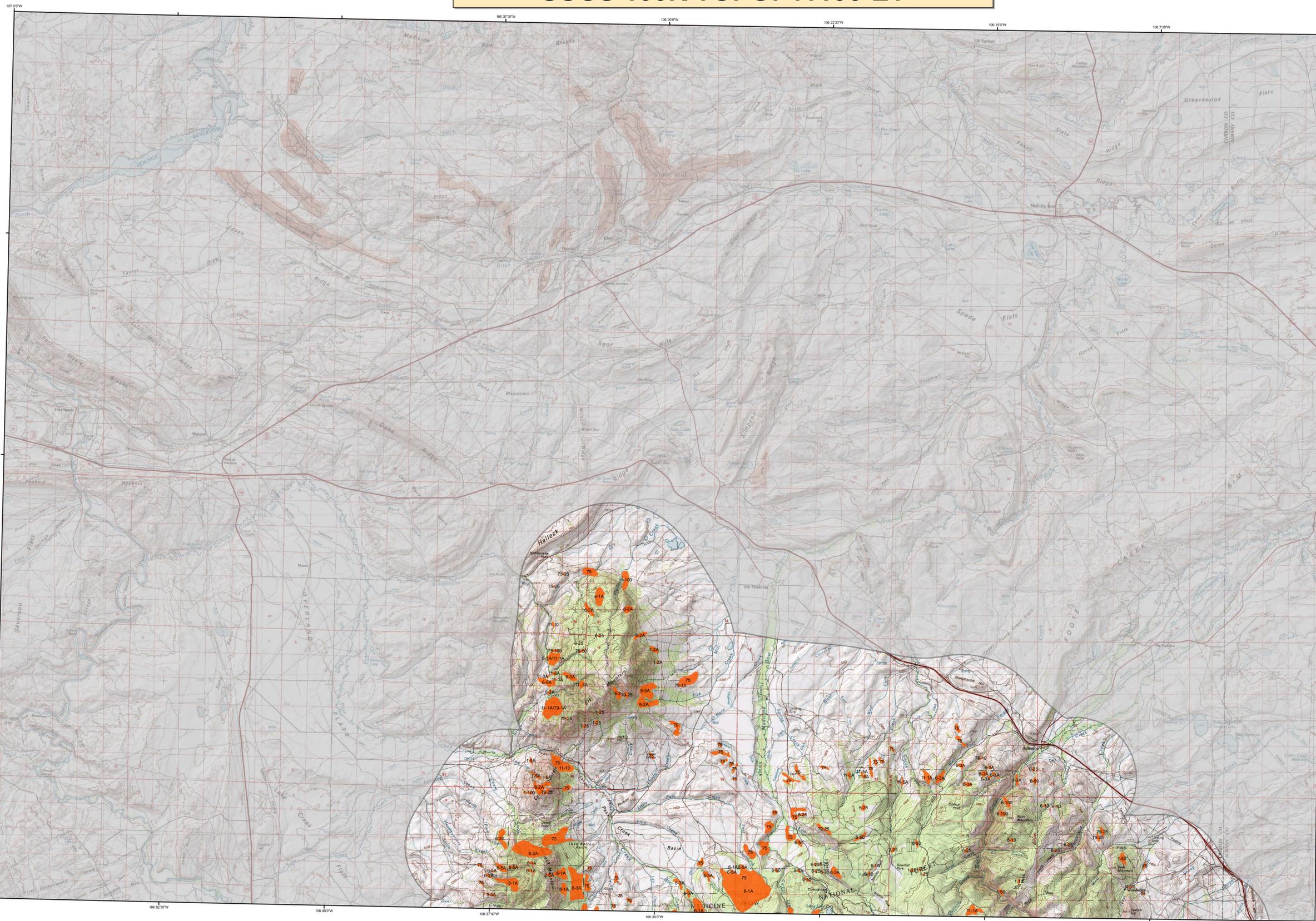


2007 Aerial Insect and Disease Survey Medicine Bow, Wyoming USGS 100K TOPO! 41106-E1



1:100,000

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Douglas fir beetle	Douglas-fir	40	Antrax	Lodgepole Pine	105	100-year fire	Yellow Pine
2	Engelmann spruce beetle	Engelmann Spruce	41	White pine blister rust	5-Needle Pine	107	fall webworm	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	42	Dwarf mistletoe	Softwoods	108	road salt	Softwoods
4	Mountain pine beetle	Lodgepole Pine	43	Elyrodemia	Ponderosa Pine	109	pinewood nematode	Softwoods
5	Needle pine beetle	5-Needle Pine	44	Insects #05, 06 & 08	All Tree Species	110	oak wilt	Oak
6	Western pine beetle	Ponderosa Pine	45	Air pollutants	All Tree Species	111	foliage disease	All Tree Species
7	White fir	White Fir	46	Chemical damage	All Tree Species	112	spruce Ips	White Spruce
8	White fir	Douglas-fir	47	Lophodermium pinastri	Softwoods	113	hemlock chestnut borer	Oak
9	White fir	Subalpine Fir	48	Rhabdocline pseudotsugae	Douglas-fir	114	anthracnose like foliar disease	Bur Oak
10	White fir	Softwoods	49	Lophodermium araucariae	Softwoods	115	Diaback	All Tree Species
11	White fir	Lodgepole Pine	50	Lachnospora acicola	Softwoods	116	Mortality	All Tree Species
12	White fir	Ponderosa Pine	51	Lophodermium concolor	Softwoods	117	Discoloration	All Tree Species
13	White fir	Lodgepole Pine	52	Dithromyza pin	Softwoods	118	Hemlock	All Tree Species
14	White fir	Ponderosa Pine	53	Needle cast (Hymenoptera)	Softwoods	119	Flagging	All Tree Species
15	White fir	Jack Pine	54	Flood Rot	All Tree Species	120	Aspen tortrix	Quaking Aspen
16	White fir	Softwoods	55	Unidentified disease	Softwoods	121	Marsipposoma Bright	Quaking Aspen
17	White fir	Douglas-fir	56	Winter damage light	All Tree Species	200	Diaback (ash)	Ash
18	White fir	Douglas-fir	57	Winter damage heavy	All Tree Species	201	Diaback (cottonwood)	Cottonwood/Poplar
19	White fir	Douglas-fir	58	Winter damage medium	All Tree Species	202	Diaback (hardwood)	Hardwoods
20	White fir	Douglas-fir	59	Winter damage heavy	All Tree Species	204	Diaback (oak)	Oak
21	White fir	Ponderosa Pine	60	Diploids	Softwoods	206	Mortality (oak)	Cottonwood/Poplar
22	White fir	Ponderosa Pine	61	Prion black stain	Common Pinyon	210	Mortality (oak cottonwood)	Cottonwood/Poplar
23	White fir	Common Pinyon	62	Fire	All Tree Species	211	Mortality (eastern cedar)	Eastern Red Cedar
24	White fir	Hardwoods	63	Poregnis	Softwoods	212	Mortality (hardwood)	Hardwoods
25	White fir	Hardwoods	64	Windthrow	All Tree Species	213	Mortality (oak)	Oak
26	White fir	Hardwoods	65	High water damage	All Tree Species	214	Mortality (spruce)	Spruce
27	White fir	Ponderosa Pine	66	Avian	All Tree Species	220	Discoloration (ash)	Ash
28	White fir	Ponderosa Pine	67	Juniper mortality-unknown agents	Juniper	221	Discoloration (cottonwood)	Softwoods
29	White fir	Ponderosa Pine	68	Juniper mortality-unknown agents	Juniper	222	Discoloration (cottonwood)	Cottonwood/Poplar
30	White fir	Hardwoods	69	Juniper mortality-unknown agents	Juniper	223	Discoloration (eastern cedar)	Eastern Red Cedar
31	White fir	Hardwoods	70	Juniper mortality-unknown agents	Juniper	224	Discoloration (hardwood)	Hardwoods
32	White fir	Hardwoods	71	Juniper mortality-unknown agents	Juniper	225	Discoloration (oak)	Oak
33	White fir	Hardwoods	72	Juniper mortality-unknown agents	Juniper	226	Discoloration (spruce)	Spruce
34	White fir	Hardwoods	73	Juniper mortality-unknown agents	Juniper	230	Hemlock (cottonwood)	Cottonwood/Poplar
35	White fir	Hardwoods	74	Juniper mortality-unknown agents	Juniper	231	Hemlock (eastern cedar)	Eastern Red Cedar
36	White fir	Hardwoods	75	Juniper mortality-unknown agents	Juniper	232	Discoloration (oak)	Oak
37	White fir	Hardwoods	76	Juniper mortality-unknown agents	Juniper	233	Discoloration (hardwood)	Hardwoods
38	White fir	Hardwoods	77	Juniper mortality-unknown agents	Juniper	234	Discoloration (oak)	Oak
39	White fir	Hardwoods	78	Juniper mortality-unknown agents	Juniper	235	Discoloration (spruce)	Spruce
40	White fir	Hardwoods	79	Juniper mortality-unknown agents	Juniper	236	Discoloration (oak)	Oak
41	White fir	Hardwoods	80	Juniper mortality-unknown agents	Juniper	237	Discoloration (hardwood)	Hardwoods
42	White fir	Hardwoods	81	Juniper mortality-unknown agents	Juniper	238	Discoloration (oak)	Oak
43	White fir	Hardwoods	82	Juniper mortality-unknown agents	Juniper	239	Discoloration (spruce)	Spruce
44	White fir	Hardwoods	83	Juniper mortality-unknown agents	Juniper	240	Discoloration (oak)	Oak
45	White fir	Hardwoods	84	Juniper mortality-unknown agents	Juniper	241	Discoloration (hardwood)	Hardwoods
46	White fir	Hardwoods	85	Juniper mortality-unknown agents	Juniper	242	Discoloration (oak)	Oak
47	White fir	Hardwoods	86	Juniper mortality-unknown agents	Juniper	243	Discoloration (spruce)	Spruce
48	White fir	Hardwoods	87	Juniper mortality-unknown agents	Juniper	244	Discoloration (oak)	Oak
49	White fir	Hardwoods	88	Juniper mortality-unknown agents	Juniper	245	Discoloration (hardwood)	Hardwoods
50	White fir	Hardwoods	89	Juniper mortality-unknown agents	Juniper	246	Discoloration (oak)	Oak
51	White fir	Hardwoods	90	Juniper mortality-unknown agents	Juniper	247	Discoloration (spruce)	Spruce
52	White fir	Hardwoods	91	Juniper mortality-unknown agents	Juniper	248	Discoloration (oak)	Oak
53	White fir	Hardwoods	92	Juniper mortality-unknown agents	Juniper	249	Discoloration (hardwood)	Hardwoods
54	White fir	Hardwoods	93	Juniper mortality-unknown agents	Juniper	250	Discoloration (oak)	Oak
55	White fir	Hardwoods	94	Juniper mortality-unknown agents	Juniper	251	Discoloration (spruce)	Spruce
56	White fir	Hardwoods	95	Juniper mortality-unknown agents	Juniper	252	Discoloration (oak)	Oak
57	White fir	Hardwoods	96	Juniper mortality-unknown agents	Juniper	253	Discoloration (hardwood)	Hardwoods
58	White fir	Hardwoods	97	Juniper mortality-unknown agents	Juniper	254	Discoloration (oak)	Oak
59	White fir	Hardwoods	98	Juniper mortality-unknown agents	Juniper	255	Discoloration (spruce)	Spruce
60	White fir	Hardwoods	99	Juniper mortality-unknown agents	Juniper	256	Discoloration (oak)	Oak
61	White fir	Hardwoods	100	Juniper mortality-unknown agents	Juniper	257	Discoloration (hardwood)	Hardwoods
62	White fir	Hardwoods	101	Juniper mortality-unknown agents	Juniper	258	Discoloration (oak)	Oak
63	White fir	Hardwoods	102	Juniper mortality-unknown agents	Juniper	259	Discoloration (spruce)	Spruce
64	White fir	Hardwoods	103	Juniper mortality-unknown agents	Juniper	260	Discoloration (oak)	Oak
65	White fir	Hardwoods	104	Juniper mortality-unknown agents	Juniper	261	Discoloration (hardwood)	Hardwoods
66	White fir	Hardwoods	105	Juniper mortality-unknown agents	Juniper	262	Discoloration (oak)	Oak



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 provide a snapshot 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 Schupp & Brian Howell
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/>