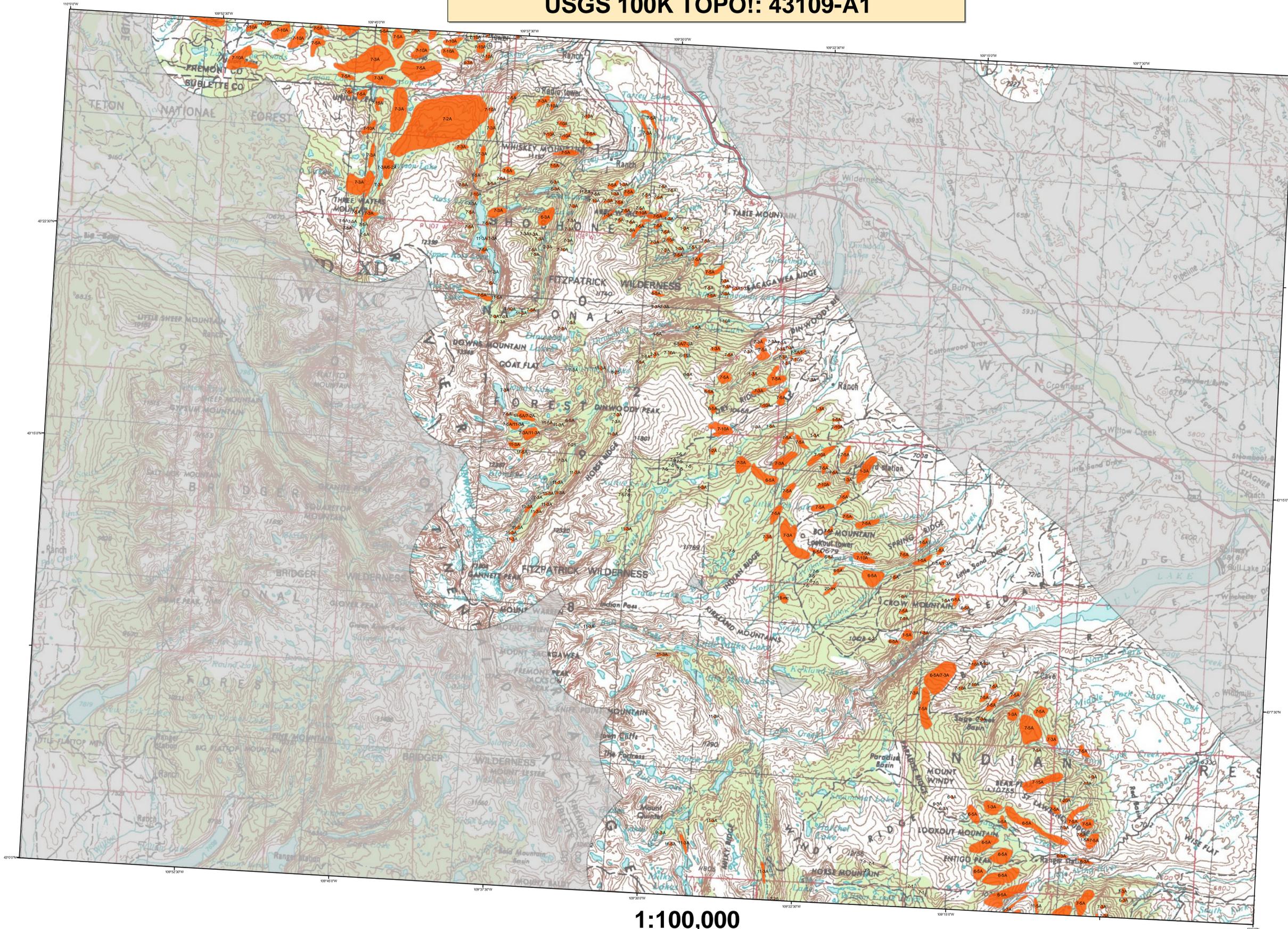


****DRAFT****

2008 Aerial Insect and Disease Survey Gannett Peak, Wyoming USGS 100K TOPO!: 43109-A1

****DRAFT****



1:100,000

Legend

Causal Agent(s) █ **Not Flown** █

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: 5-102A = 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	48	Anisoplia	Lodgepole Pine	100	Sex-segregated flagging	Cottonwood/Poplar
2	Engelmann spruce beetle	Engelmann Spruce	50	White pine blister rust	Lodgepole Pine	101	Sex-segregated flagging	Cottonwood/Poplar
3	Mountain pine beetle	Ponderosa Pine	51	Dwarf mistletoe	Lodgepole Pine	102	Sex-segregated flagging	Cottonwood/Poplar
4	Mountain pine beetle	Lodgepole Pine	52	Elysirodes	Ponderosa Pine	103	Sex-segregated flagging	Cottonwood/Poplar
5	Mountain pine beetle	5-Needle Pine	53	Includes #55, 56 & 58	All Tree Species	110	oak wilt	Oak
6	Western pine beetle	Ponderosa Pine	54	Air pollution	All Tree Species	111	foliage disease	All Tree Species
7	Western pine beetle	White Fir	55	Chemical damage	All Tree Species	112	spine rust	White Spruce
8	Western pine beetle	Douglas fir	56	Lophodermium pinastri	Softwoods	113	twined chestnut borer	Oak
9	Western pine beetle	Subalpine Fir	57	Rhizodiplosis pseudotulage	Douglas fir	114	anthracnose like foliar disease	Bur Oak
10	Western pine beetle	Softwoods	58	Lophodermium arcuta	Softwoods	115	Dieback	All Tree Species
11	Western pine beetle	Lodgepole Pine	59	Lecanosticta sciocopa	Softwoods	116	Mortality	All Tree Species
12	Western pine beetle	Ponderosa Pine	60	Lophodermium concolor	Softwoods	117	Discoloration	All Tree Species
13	Western pine beetle	Lodgepole Pine	61	Dactyloctenium jun	Softwoods	118	Herbicide	All Tree Species
14	Western pine beetle	Ponderosa Pine	62	Needle cast (Hyodemataceae)	Softwoods	119	Flagging	All Tree Species
15	Western pine beetle	Jack Pine	63	Root Rot	All Tree Species	120	aspens tortrix	Quaking Aspen
16	Western pine beetle	Douglas fir	64	Unidentified disease	Softwoods	121	Marsippos Blight	Quaking Aspen
17	Western pine beetle	Softwoods	65	Winter damage light	All Tree Species	200	Dieback (ash)	Ash
18	Western pine beetle	Douglas fir	66	Winter damage medium	All Tree Species	201	Dieback (cottonwood)	Cottonwood/Poplar
19	Western pine beetle	Jack Pine	67	Winter damage heavy	All Tree Species	202	Dieback (hardwood)	Hardwoods
20	Western pine beetle	Douglas fir	68	Winter damage very heavy	All Tree Species	203	Dieback (oak)	Oak
21	Western pine beetle	Softwoods	69	Pinyon black stain	Common Pinyon	210	Mortality (oak cottonwood)	Cottonwood/Poplar
22	Western pine beetle	Ponderosa Pine	70	Fire	All Tree Species	211	Mortality (eastern cedar)	Eastern Red Cedar
23	Western pine beetle	Lodgepole Pine	71	Fire	All Tree Species	212	Mortality (hardwood)	Hardwoods
24	Western pine beetle	White Spruce	72	Windthrow	All Tree Species	213	Mortality (oak)	Oak
25	Western pine beetle	Hardwoods	73	High water damage	All Tree Species	220	Mortality (spruce)	Spruce
26	Western pine beetle	Hardwoods	74	Avalanche	All Tree Species	221	Mortality (ash)	Ash
27	Western pine beetle	Hardwoods	75	Aspen decline-multiple agents)	Quaking Aspen	222	Discoloration (conifer)	Softwoods
28	Western pine beetle	Hardwoods	76	Pinyon pine mortality	Common Pinyon	223	Discoloration (cottonwood)	Cottonwood/Poplar
29	Western pine beetle	Hardwoods	77	Juniper mortality-unknown agents)	Juniper	224	Discoloration (eastern cedar)	Eastern Red Cedar
30	Western pine beetle	Hardwoods	78	Gambel oak decline-unknown agents)	Gambel Oak	225	Discoloration (hardwood)	Hardwoods
31	Western pine beetle	Hardwoods	79	Limber pine decline-multiple agents)	Limber Pine	226	Discoloration (oak)	Oak
32	Western pine beetle	Hardwoods	80	Hail damage	All Tree Species	227	Discoloration (spruce)	Spruce
33	Western pine beetle	Hardwoods	81	Limber pine polygon	Common Pinyon	228	Herbicide (cottonwood)	Cottonwood/Poplar
34	Western pine beetle	Hardwoods	82	100 yr old pinyon mortality	All Tree Species	231	Herbicide (eastern cedar)	Eastern Red Cedar
35	Western pine beetle	Hardwoods	83	road salt top	Lodgepole Pine	240	Flagging (hardwood)	Hardwoods
36	Western pine beetle	Hardwoods	101	102 slash em disease	Elm	250	Unidentified defoliator (cottonwood)	Cottonwood/Poplar
37	Western pine beetle	Hardwoods	103	103 slash em disease	Ponderosa Pine	251	Unidentified defoliator (elm)	Elm
38	Western pine beetle	Hardwoods	104	104 slash em disease	Spruce, White Spruce	252	Unidentified defoliator (hardwood)	Hardwoods
39	Western pine beetle	Hardwoods	105	drought killed narrow leaf cottonwood	Narrowleaf Cottonwood	300	Mortality (pine)	Pine

USGS 100K Quad - Location Map



Legend

- Flown Area
- State Boundaries
- 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 AI Dymerski
Map Created:
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/>