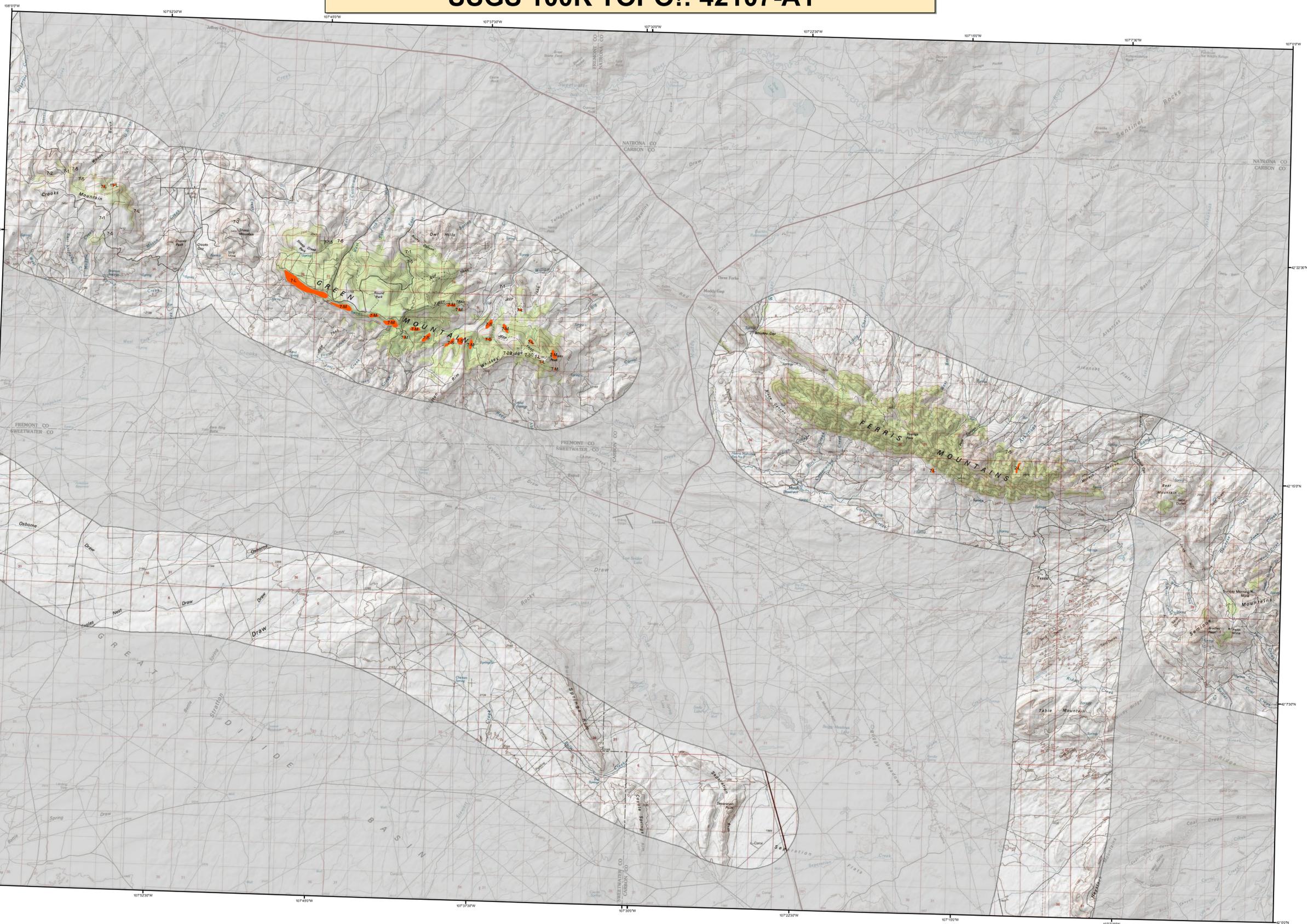


# 2015 Aerial Insect and Disease Survey BAIROIL, WYOMING USGS 100K TOPO!: 42107-A1



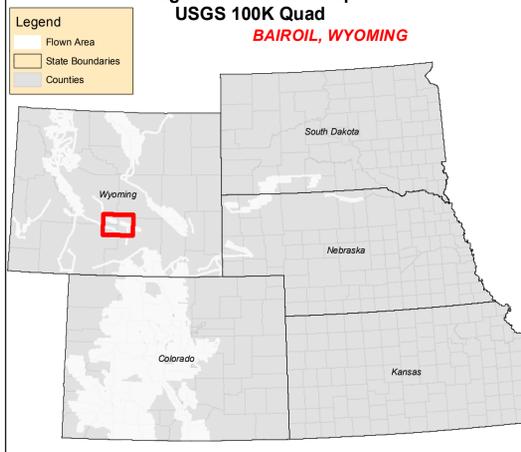
1:100,000

## Legend

Use of the Number System  
Example: S-1 = The first number before the dash is the causal agent code. The letter after the dash is the estimate of dead "faded" trees in the polygon or point as a percentage of the total trees within the delineated area. An intensity code of Tr-Trace, L-Light, M-Moderate, S-Severe, and VS-Very Severe may be used after the causal agent code.  
Trace: 1-3%; Light: 4-10%; Moderate: 11-29%; Severe: 30-50%; Very Severe: >50%. Value ranges represent the percent of current "faded" in relation to the total forested area within the polygon. Periodically, whole numbers of trees can be used as an intensity code for small groups of trees. For example: 5-10 = 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.

Code	Causal Agent	Primary Host	Code	Causal Agent	Primary Host
1	Oregonian fir beetle	Douglas-fir	99	Unknown	Unknown
2	Engelmann spruce beetle	Engelmann spruce	48	Stalactiform rust	Lodgepole pine
3	Blue spruce tip	Blue spruce	50	White pine blister rust	Lodgepole pine
5	Mountain pine beetle	Ponderosa pine	51	Dwarf mistletoe	Softwoods
7	Mountain pine beetle	Lodgepole pine	52	Elythroderma	Ponderosa pine
8	Western pine beetle	Sitka spruce	53	Insects R65, R6 & R8	All Tree Species
9	Pine engraver	Ponderosa pine	54	Air pollutants	All Tree Species
10	Douglas-fir engraver beetle	White fir	55	Chemical damage	All Tree Species
11	Western balsam bark beetle	Subalpine fir	56	Lophodermium pinastri	Softwoods
12	Unidentified bark beetle	Softwoods	57	Rhabdocline pseudotsugae	Douglas-fir
13	Pine engraver	Lodgepole pine	58	Lophodermium arcaus	Softwoods
14	Pine engraver	Ponderosa pine	59	Lacunosia acicola	Softwoods
15	Ponderosa pine needle miner	Lodgepole pine	60	Lophodermium concolor	Softwoods
16	Lodgepole pine needle miner	Ponderosa pine	61	Dofstoma pini	Softwoods
17	Jack pine budworm	Jack pine	62	Needle cast (Hypodemateaceae)	All Tree Species
18	Spruce budworm, light defol.	Douglas-fir	63	Root rot	All Tree Species
19	Spruce budworm, medium defol.	All Tree Species	64	Unidentified disease	Softwoods
20	Spruce budworm, heavy defol.	All Tree Species	65	Winter damage light	All Tree Species
22	Douglas-fir tussock moth	Douglas-fir	66	Winter damage medium	All Tree Species
23	Pine butterfly	Ponderosa pine	67	Winter damage heavy	All Tree Species
25	Pine looper	Ponderosa pine	68	Dipicida	Softwoods
26	Pine tortrix	Ponderosa pine	69	Prion black stain	Common Prinson
28	Text caterpillars	Hardwoods	70	Fire	All Tree Species
29	Leaf beetles	Hardwoods	71	Porcupine	All Tree Species
30	Aspen defoliation	Hardwoods	72	Windthrow	All Tree Species
33	Oak leaf roller	Hardwoods	73	High water damage	All Tree Species
34	Pine needle-needle miner	Ponderosa pine	74	Avellanche	All Tree Species
35	Pine sawflies	Ponderosa pine	75	Aspen decline-multiple agents)	Quaking aspen
36	Pine tussock moth	Ponderosa pine	76	Prion pine mortality	Common Prinson
37	Cankers/rot	Hardwoods	77	Juniper mortality-unknown agent(s)	Juniper
38	Variable oak leaf caterpillar	Hardwoods	78	Gambel oak decline-unknown agent(s)	Gambel oak
39	Unidentified defoliator	All Tree Species	79	Limber pine decline-multiple agents)	Limber pine
40	Cottonwood Decline/Mortality	Softwoods	80	Hail damage	All Tree Species
41	Heterobasidion annosum (Fomes annosus)	Softwoods	89	Unknown polygon	Unknown
42	Armillaria ostroyae (Armillaria mellea)	Softwoods	100	old prison mortality	Common Prinson
43	Phomopsis	Softwoods	101	road salt tip	Lodgepole pine
44	Cytospora	All Tree Species	102	elm disease	Elm
45	Western gall rust	Unknown	103	dipicola blight	Ponderosa pine
46	Comandra rust	Unknown	104	straggle killed narrow leaf cottonwood	Narrowleaf Cottonwood
100	Mortality (grey)		105	Mortality (grey)	

## Region 2 - Location Map USGS 100K Quad BAIROIL, WYOMING



## 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.

Map Created: 11/24/2015  
Projection: UTM NAD83 Zone 13  
Author: J. Ross, USDA Forest Service  
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/>

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\*\*\*\*DISCLAIMER\*\*\*\*  
Forest Health Protection (FHP) and its partners strive to maintain an accurate Aerial Detection Survey (ADS) Dataset, but due to the conditions under which the data are collected, FHP and its partners shall not be held responsible for missing or inaccurate data. ADS are not intended to replace more specific information. An accuracy assessment has not been done for this dataset; however, ground checks are completed in accordance with local and national guidelines <http://www.fs.fed.us/foresthealth/nationalqualityassurance.shtml>. Maps and data may be updated without notice. Please cite "USDA Forest Service, Forest Health Protection and its partners" as the source of this data in maps and publications.

Due to the nature of aerial surveys, the data on this map 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.