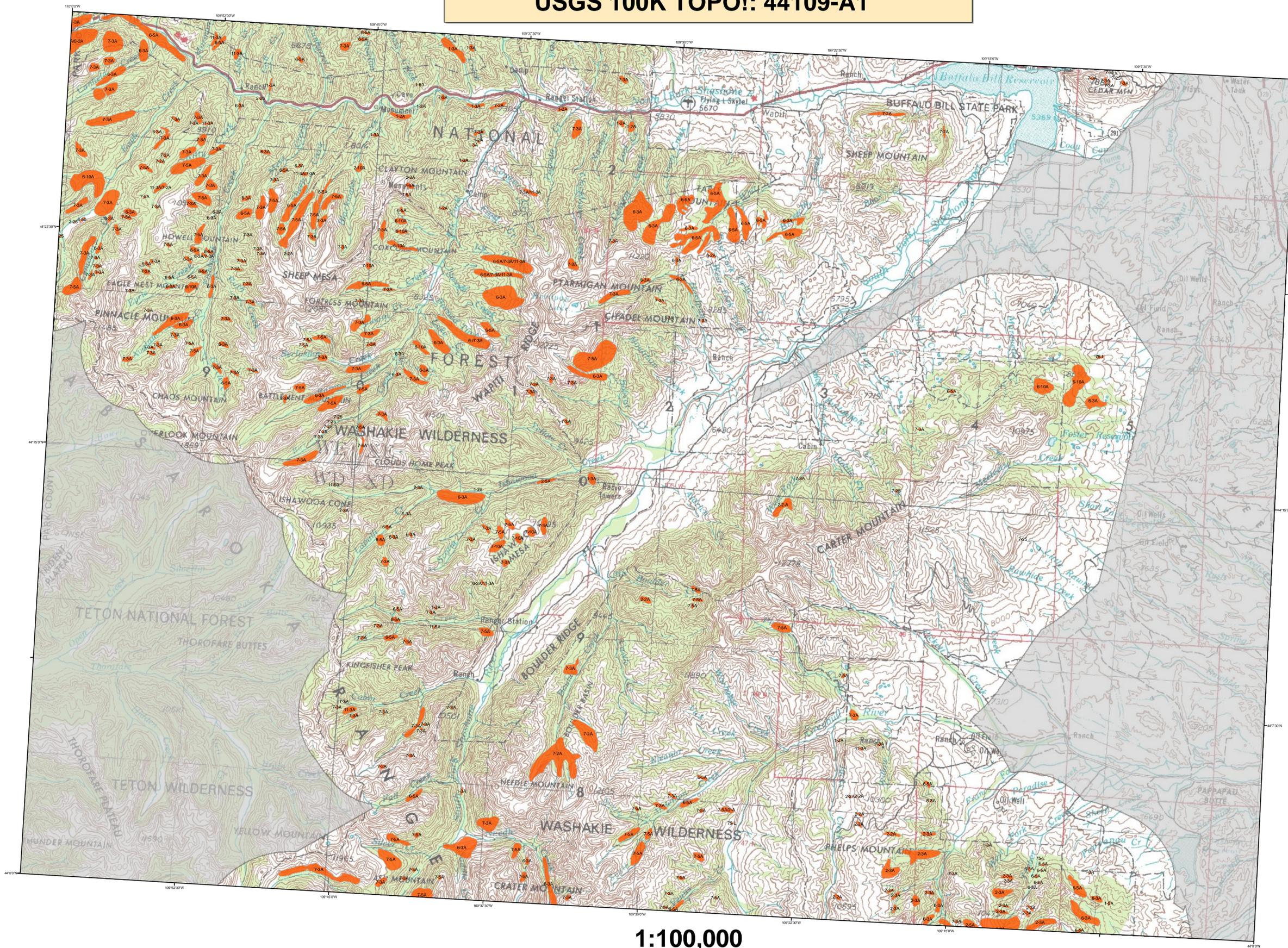


2008 Aerial Insect and Disease Survey Carter Mountain, Wyoming USGS 100K TOPO!: 44109-A1

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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	Anopliis	Lodgepole Pine	100	Tox squirrel flagging	Cottwood Poplar
2	Equine pine beetle	Western Spruce	41	White pine blister rust	White Pine	101	Red weevil	Cottwood Poplar
3	Mountain pine beetle	Ponderosa Pine	42	Dwarf mistletoe	Softwoods	102	Red weevil	Softwoods
4	Mountain pine beetle	Lodgepole Pine	43	Echinomela	Ponderosa Pine	103	Ground nematode	Softwoods
5	Needle Pine	5-Needle Pine	44	Insects #05, 06 & 09	All Tree Species	104	oak wilt	Oak
6	Western spruce sawfly	White Fir	45	Chemical damage	All Tree Species	105	oak wilt	All Tree Species
7	Western spruce sawfly	White Fir	46	Chemical damage	All Tree Species	106	oak wilt	White Spruce
8	Western spruce sawfly	White Fir	47	Chemical damage	All Tree Species	107	oak wilt	White Spruce
9	Western spruce sawfly	White Fir	48	Chemical damage	All Tree Species	108	oak wilt	White Spruce
10	Western spruce sawfly	White Fir	49	Chemical damage	All Tree Species	109	oak wilt	White Spruce
11	Western spruce sawfly	White Fir	50	Chemical damage	All Tree Species	110	oak wilt	White Spruce
12	Western spruce sawfly	White Fir	51	Chemical damage	All Tree Species	111	oak wilt	White Spruce
13	Western spruce sawfly	White Fir	52	Chemical damage	All Tree Species	112	oak wilt	White Spruce
14	Western spruce sawfly	White Fir	53	Chemical damage	All Tree Species	113	oak wilt	White Spruce
15	Western spruce sawfly	White Fir	54	Chemical damage	All Tree Species	114	oak wilt	White Spruce
16	Western spruce sawfly	White Fir	55	Chemical damage	All Tree Species	115	oak wilt	White Spruce
17	Western spruce sawfly	White Fir	56	Chemical damage	All Tree Species	116	oak wilt	White Spruce
18	Western spruce sawfly	White Fir	57	Chemical damage	All Tree Species	117	oak wilt	White Spruce
19	Western spruce sawfly	White Fir	58	Chemical damage	All Tree Species	118	oak wilt	White Spruce
20	Western spruce sawfly	White Fir	59	Chemical damage	All Tree Species	119	oak wilt	White Spruce
21	Western spruce sawfly	White Fir	60	Chemical damage	All Tree Species	120	oak wilt	White Spruce
22	Western spruce sawfly	White Fir	61	Chemical damage	All Tree Species	121	oak wilt	White Spruce
23	Western spruce sawfly	White Fir	62	Chemical damage	All Tree Species	122	oak wilt	White Spruce
24	Western spruce sawfly	White Fir	63	Chemical damage	All Tree Species	123	oak wilt	White Spruce
25	Western spruce sawfly	White Fir	64	Chemical damage	All Tree Species	124	oak wilt	White Spruce
26	Western spruce sawfly	White Fir	65	Chemical damage	All Tree Species	125	oak wilt	White Spruce
27	Western spruce sawfly	White Fir	66	Chemical damage	All Tree Species	126	oak wilt	White Spruce
28	Western spruce sawfly	White Fir	67	Chemical damage	All Tree Species	127	oak wilt	White Spruce
29	Western spruce sawfly	White Fir	68	Chemical damage	All Tree Species	128	oak wilt	White Spruce
30	Western spruce sawfly	White Fir	69	Chemical damage	All Tree Species	129	oak wilt	White Spruce
31	Western spruce sawfly	White Fir	70	Chemical damage	All Tree Species	130	oak wilt	White Spruce
32	Western spruce sawfly	White Fir	71	Chemical damage	All Tree Species	131	oak wilt	White Spruce
33	Western spruce sawfly	White Fir	72	Chemical damage	All Tree Species	132	oak wilt	White Spruce
34	Western spruce sawfly	White Fir	73	Chemical damage	All Tree Species	133	oak wilt	White Spruce
35	Western spruce sawfly	White Fir	74	Chemical damage	All Tree Species	134	oak wilt	White Spruce
36	Western spruce sawfly	White Fir	75	Chemical damage	All Tree Species	135	oak wilt	White Spruce
37	Western spruce sawfly	White Fir	76	Chemical damage	All Tree Species	136	oak wilt	White Spruce
38	Western spruce sawfly	White Fir	77	Chemical damage	All Tree Species	137	oak wilt	White Spruce
39	Western spruce sawfly	White Fir	78	Chemical damage	All Tree Species	138	oak wilt	White Spruce
40	Western spruce sawfly	White Fir	79	Chemical damage	All Tree Species	139	oak wilt	White Spruce
41	Western spruce sawfly	White Fir	80	Chemical damage	All Tree Species	140	oak wilt	White Spruce
42	Western spruce sawfly	White Fir	81	Chemical damage	All Tree Species	141	oak wilt	White Spruce
43	Western spruce sawfly	White Fir	82	Chemical damage	All Tree Species	142	oak wilt	White Spruce
44	Western spruce sawfly	White Fir	83	Chemical damage	All Tree Species	143	oak wilt	White Spruce
45	Western spruce sawfly	White Fir	84	Chemical damage	All Tree Species	144	oak wilt	White Spruce
46	Western spruce sawfly	White Fir	85	Chemical damage	All Tree Species	145	oak wilt	White Spruce
47	Western spruce sawfly	White Fir	86	Chemical damage	All Tree Species	146	oak wilt	White Spruce
48	Western spruce sawfly	White Fir	87	Chemical damage	All Tree Species	147	oak wilt	White Spruce
49	Western spruce sawfly	White Fir	88	Chemical damage	All Tree Species	148	oak wilt	White Spruce
50	Western spruce sawfly	White Fir	89	Chemical damage	All Tree Species	149	oak wilt	White Spruce
51	Western spruce sawfly	White Fir	90	Chemical damage	All Tree Species	150	oak wilt	White Spruce
52	Western spruce sawfly	White Fir	91	Chemical damage	All Tree Species	151	oak wilt	White Spruce
53	Western spruce sawfly	White Fir	92	Chemical damage	All Tree Species	152	oak wilt	White Spruce
54	Western spruce sawfly	White Fir	93	Chemical damage	All Tree Species	153	oak wilt	White Spruce
55	Western spruce sawfly	White Fir	94	Chemical damage	All Tree Species	154	oak wilt	White Spruce
56	Western spruce sawfly	White Fir	95	Chemical damage	All Tree Species	155	oak wilt	White Spruce
57	Western spruce sawfly	White Fir	96	Chemical damage	All Tree Species	156	oak wilt	White Spruce
58	Western spruce sawfly	White Fir	97	Chemical damage	All Tree Species	157	oak wilt	White Spruce
59	Western spruce sawfly	White Fir	98	Chemical damage	All Tree Species	158	oak wilt	White Spruce
60	Western spruce sawfly	White Fir	99	Chemical damage	All Tree Species	159	oak wilt	White Spruce
61	Western spruce sawfly	White Fir	100	Chemical damage	All Tree Species	160	oak wilt	White Spruce
62	Western spruce sawfly	White Fir	101	Chemical damage	All Tree Species	161	oak wilt	White Spruce
63	Western spruce sawfly	White Fir	102	Chemical damage	All Tree Species	162	oak wilt	White Spruce
64	Western spruce sawfly	White Fir	103	Chemical damage	All Tree Species	163	oak wilt	White Spruce
65	Western spruce sawfly	White Fir	104	Chemical damage	All Tree Species	164	oak wilt	White Spruce
66	Western spruce sawfly	White Fir	105	Chemical damage	All Tree Species	165	oak wilt	White Spruce
67	Western spruce sawfly	White Fir	106	Chemical damage	All Tree Species	166	oak wilt	White Spruce
68	Western spruce sawfly	White Fir	107	Chemical damage	All Tree Species	167	oak wilt	White Spruce
69	Western spruce sawfly	White Fir	108	Chemical damage	All Tree Species	168	oak wilt	White Spruce
70	Western spruce sawfly	White Fir	109	Chemical damage	All Tree Species	169	oak wilt	White Spruce
71	Western spruce sawfly	White Fir	110	Chemical damage	All Tree Species	170	oak wilt	White Spruce
72	Western spruce sawfly	White Fir	111	Chemical damage	All Tree Species	171	oak wilt	White Spruce
73	Western spruce sawfly	White Fir	112	Chemical damage	All Tree Species	172	oak wilt	White Spruce
74	Western spruce sawfly	White Fir	113	Chemical damage	All Tree Species	173	oak wilt	White Spruce
75	Western spruce sawfly	White Fir	114	Chemical damage	All Tree Species	174	oak wilt	White Spruce
76	Western spruce sawfly	White Fir	115	Chemical damage	All Tree Species	175	oak wilt	White Spruce
77	Western spruce sawfly	White Fir	116	Chemical damage	All Tree Species	176	oak wilt	White Spruce
78	Western spruce sawfly	White Fir	117	Chemical damage	All Tree Species	177	oak wilt	White Spruce
79	Western spruce sawfly	White Fir	118	Chemical damage	All Tree Species	178	oak wilt	White Spruce
80	Western spruce sawfly	White Fir	119	Chemical damage	All Tree Species	179	oak wilt	White Spruce
81	Western spruce sawfly	White Fir	120	Chemical damage	All Tree Species	180	oak wilt	White Spruce
82	Western spruce sawfly	White Fir	121	Chemical damage	All Tree Species	181	oak wilt	White Spruce
83	Western spruce sawfly	White Fir	122	Chemical damage	All Tree Species	182	oak wilt	White Spruce
84	Western spruce sawfly	White Fir	123	Chemical damage	All Tree Species	183	oak wilt	White Spruce
85	Western spruce sawfly	White Fir	124	Chemical damage	All Tree Species	184	oak wilt	White Spruce
86	Western spruce sawfly	White Fir	125	Chemical damage	All Tree Species	185	oak wilt	White Spruce
87	Western spruce sawfly	White Fir	126	Chemical damage	All Tree Species	186	oak wilt	White Spruce
88	Western spruce sawfly	White Fir	127	Chemical damage	All Tree Species	187	oak wilt	White Spruce
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94	Western spruce sawfly	White Fir	133	Chemical damage	All Tree Species	193	oak wilt	White Spruce
95	Western spruce sawfly	White Fir	134	Chemical damage	All Tree Species	194	oak wilt	White Spruce
96	Western spruce sawfly	White Fir	135	Chemical damage	All Tree Species	195	oak wilt	White Spruce
97	Western spruce sawfly	White Fir	136	Chemical damage	All Tree Species	196	oak wilt	White Spruce
98	Western spruce sawfly	White Fir	137	Chemical damage	All Tree Species	197	oak wilt	White Spruce
99	Western spruce sawfly	White Fir	138	Chemical damage	All Tree Species	198	oak wilt	White Spruce
100	Western spruce sawfly	White Fir	139	Chemical damage	All Tree Species	199	oak wilt	White Spruce
101	Western spruce sawfly	White Fir	140	Chemical damage	All Tree Species	200	oak wilt	White Spruce



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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1100 West 22nd Street
Cheyenne, Wyoming 82002

USDA Forest Service, Region 2
Renewable Resources
Forest Health Management
PO Box 25127
Lakewood, Colorado 80225

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/>