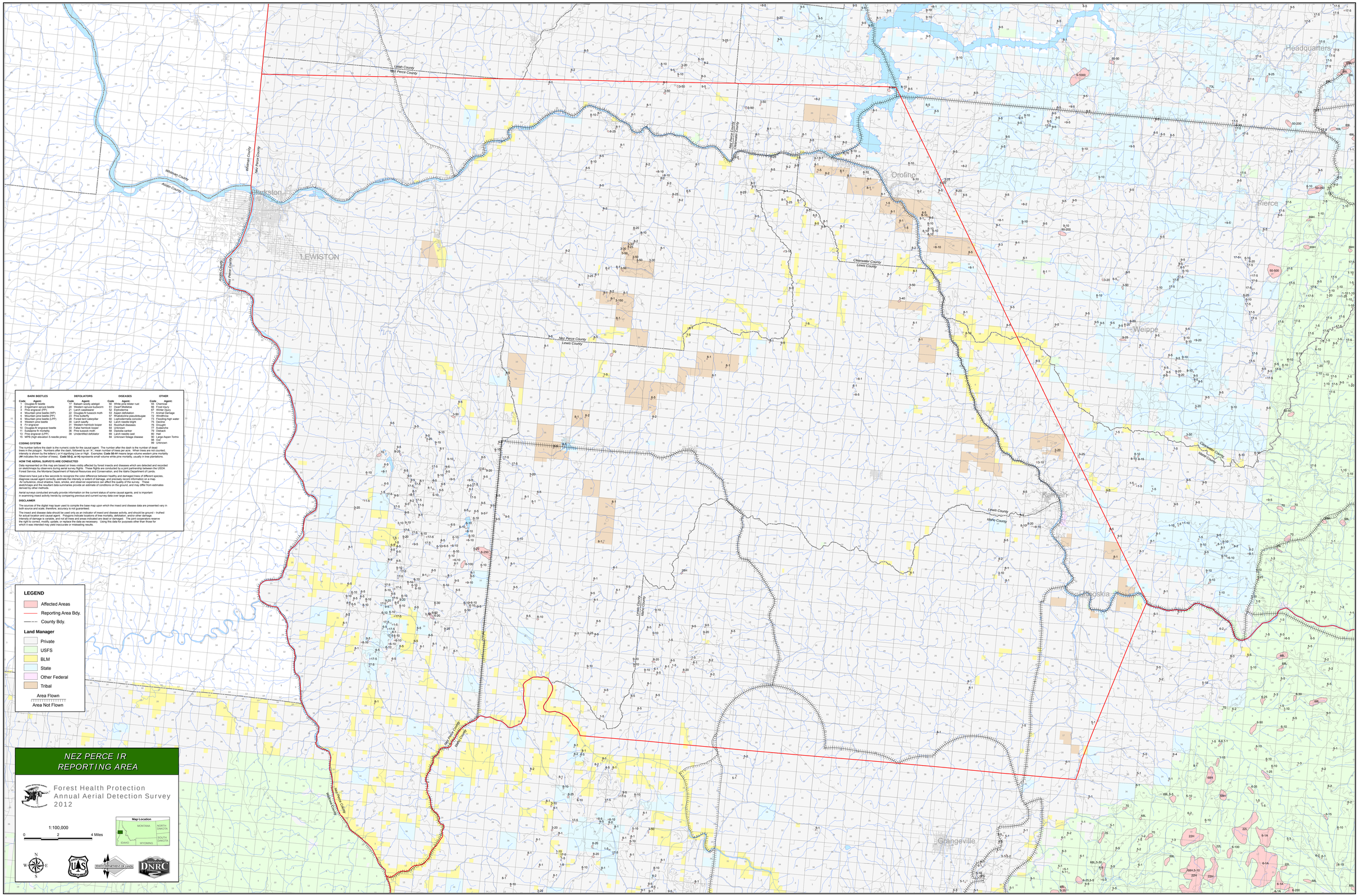

BARK BEETLES

Code	Agent:
1	Douglas-fir beetle
2	Engelmann spruce beetle
3	Fir engraver (IPS)
4	Mountain pine beetle (MP)
5	Mountain pine beetle (PP)
6	Western pine beetle (LPP)
8	Western pine beetle
9	Fir engraver
10	Douglas-fir engraver beetle
11	Subalpine fir mortality
12	Pine engraver (LPP)
13	Pine engraver (UPP)
15	MPB (high elevation 5-needle pines)

DEFOLIATORS

Code	Agent:
17	Balsam woolly adelgid
20	Western spruce budworm
21	Douglas-fir tussock moth
22	Douglas-fir tussock moth
23	Pine butterfly
24	Western tent caterpillar
25	Larch sawfly
30	Western hemlock looper
31	Western hemlock looper
33	False hemlock looper
35	Pine tussock moth
36	Unidentified defoliator

DISEASES

Code	Agent:
50	White pine blister rust
51	Dwarf Mistletoe
52	Root disease
53	Aspen defoliation
57	Rhabdocline pseudotsugae
58	Lophodermella concolor
60	Larch needle blight
63	Root/butt diseases
64	Unknown
66	Diplodia canker
68	Larch needle cast
84	Unknown foliage disease

OTHER

Code	Agent:
55	Chemical
66	Frost injury
70	Hail damage
71	Animal Damage
72	Windthrow
73	Flooding-high water
74	Decline
75	Drought
77	Avalanche
78	Wildfire
80	Hail
90	Large Aspen Tortrix
98	Out
99	Unknown

CODING SYSTEM

The number before the dash is the numeric code for the causal agent. The number after the dash is the number of dead trees in the polygon. The letters after the dash (followed by an "A") mean number of trees (no dot). If their trees are not counted, the letters are blank. The letters L or H signifying Low or High. Examples: **Code 50-H** means large volume mortality, **Code 50-1** is mortality **1H** indicates the number of trees). **Code 50-L** or **H)** represents small volume white pine mortality, usually in tree plantations.

HOW THE AERIAL SURVEYS ARE CONDUCTED

Data represented on this map are based on trees visibly affected by forest insects and diseases which are detected and recorded on sketchmaps by observers during aerial survey flights. These flights are conducted by a joint partnership between the USDA Forest Service, the Montana Department of Natural Resources and Conservation, and the Idaho Department of Lands.

Observers have just a few seconds to recognize the color difference between healthy and damaged trees of different species, diagnose causal agent correctly, estimate the intensity or extent of damage, and precisely record information on a map. Air turbulence, cloud shadow, haze, smoke, and observer experience can affect the quality of the survey. These aerial survey sketchmap and ground data summaries provide an estimate of conditions on the ground, and may differ from estimates derived by other methods.

Aerial surveys conducted annually provide information on the current status of some causal agents, and is important in examining insect activity trends by comparing previous and current survey data over large areas.

DISCLAIMER

The sources of the digital map layer used to compile the base map upon which the insect and disease data are presented vary in time, source and scale. Therefore, accuracy is not guaranteed.

The insect and disease data should be used only as an indicator of insect and disease activity, and should be ground – truthed for actual location and causal agent. Polygons indicate locations of tree mortality, defoliation, and/or other damage. Intensity of damage is variable, and not all trees and areas indicated are dead or damaged. The joint cooperators reserve the right to correct, modify, update, or replace the data as necessary. Using this data for purposes other than those for which it was intended may yield inaccurate or misleading results.