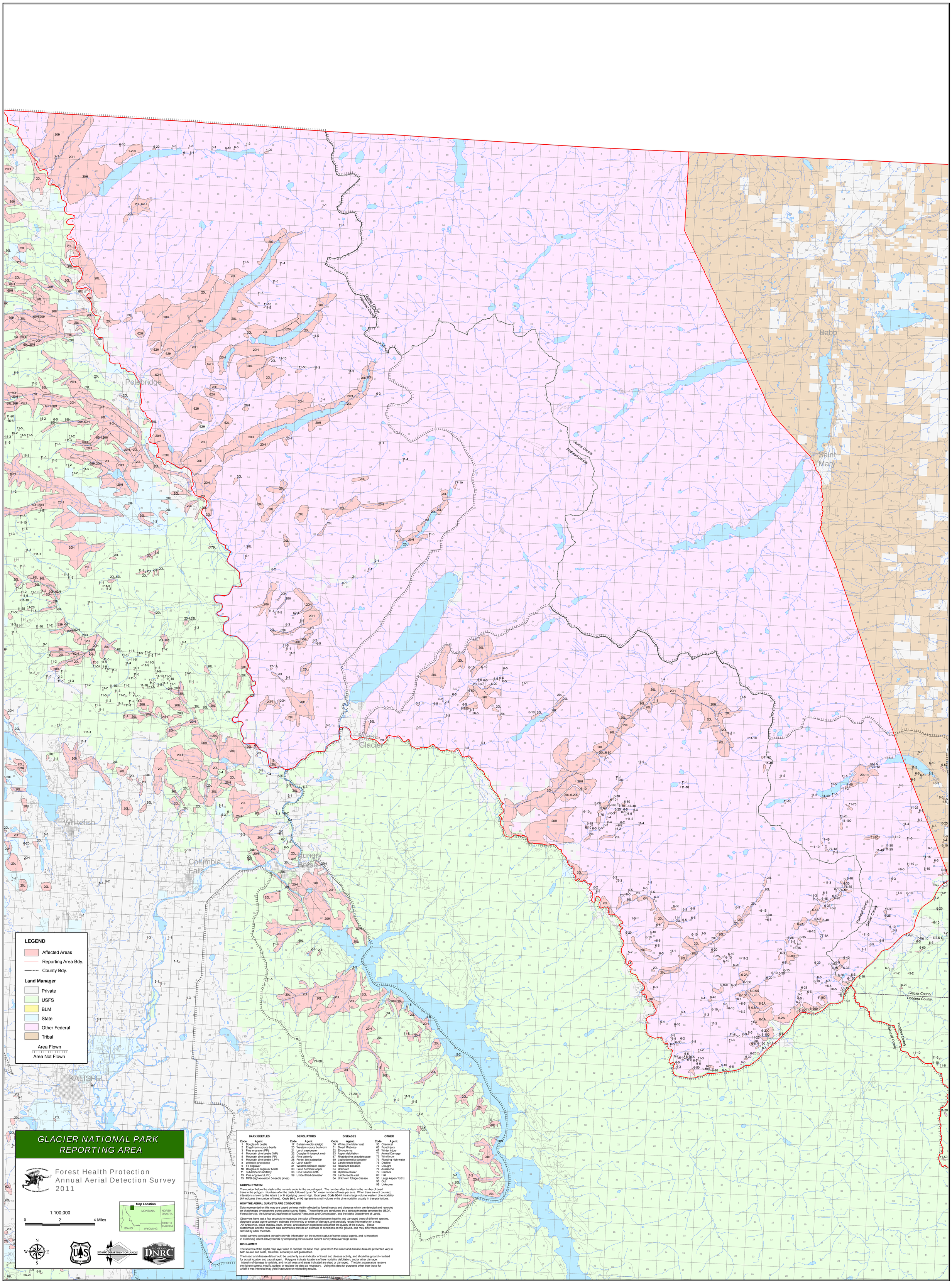
Polebridge
Babb
Saint Mary
West Glacier
Whitefish
Columbia Falls
Hungry Horse
KALISPELL
Glacier County
Flathead County
Pondera County
LEGEND
Affected Areas
Reporting Area Bdy.
County Bdy.
Land Manager
Private
USFS
BLM
State
Other Federal
Tribal
Area Flown
Area Not Flown
GLACIER NATIONAL PARK
REPORTING AREA
Forest Health Protection
Annual Aerial Detection Survey
2011
1:100,000
0
2
4 Miles
Map Location
MONTANA
NORTH DAKOTA
SOUTH DAKOTA
IDAHO
WYOMING
N
W
E
S
IDAHO DEPARTMENT OF LANDS
MONTANA DNRC
BARK BEETLES
Code Agent:
1 Douglas-fir beetle
2 Engelmann spruce beetle
3 Pine engraver (PP)
4 Mountain pine beetle (WP)
5 Mountain pine beetle (PP)
6 Mountain pine beetle (LPP)
8 Western pine beetle
9 Fir engraver
10 Douglas-fir engraver beetle
11 Subalpine fir mortality
13 Pine engraver (LPP)
15 MPB (high elevation 5-needle pines)
DEFOLIATORS
Code Agent:
17 Balsam woolly adelgid
20 Western spruce budworm
21 Larch casebearer
22 Douglas-fir tussock moth
23 Pine butterfly
28 Forest tent caterpillar
30 Larch sawfly
31 Western hemlock looper
33 False hemlock looper
36 Pine tussock moth
39 Unidentified defoliator
DISEASES
Code Agent:
50 White pine blister rust
51 Dwarf Mistletoe
52 Elytroderma
53 Aspen defoliation
57 Rhabdocline pseudotsugae
60 Lophodermella concolor
62 Larch needle blight
63 Root/butt diseases
64 Unknown
68 Diplodia canker
69 Larch needle cast
84 Unknown foliage disease
OTHER
Code Agent:
55 Chemical
66 Frost injury
67 Winter injury
71 Animal Damage
72 Windthrow
73 Flooding-high water
75 Decline
76 Drought
77 Avalanche
79 Dieback
80 Hail
90 Large Aspen Tortrix
98 Cut
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. Numbers after the dash, followed by an "A", mean number of trees per acre. When trees are not counted, intensity is shown by the letters L or H signifying Low or High. Examples: Code 50-##: means large volume western pine mortality (## 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 sketchmaps and the resultant 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 both 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.