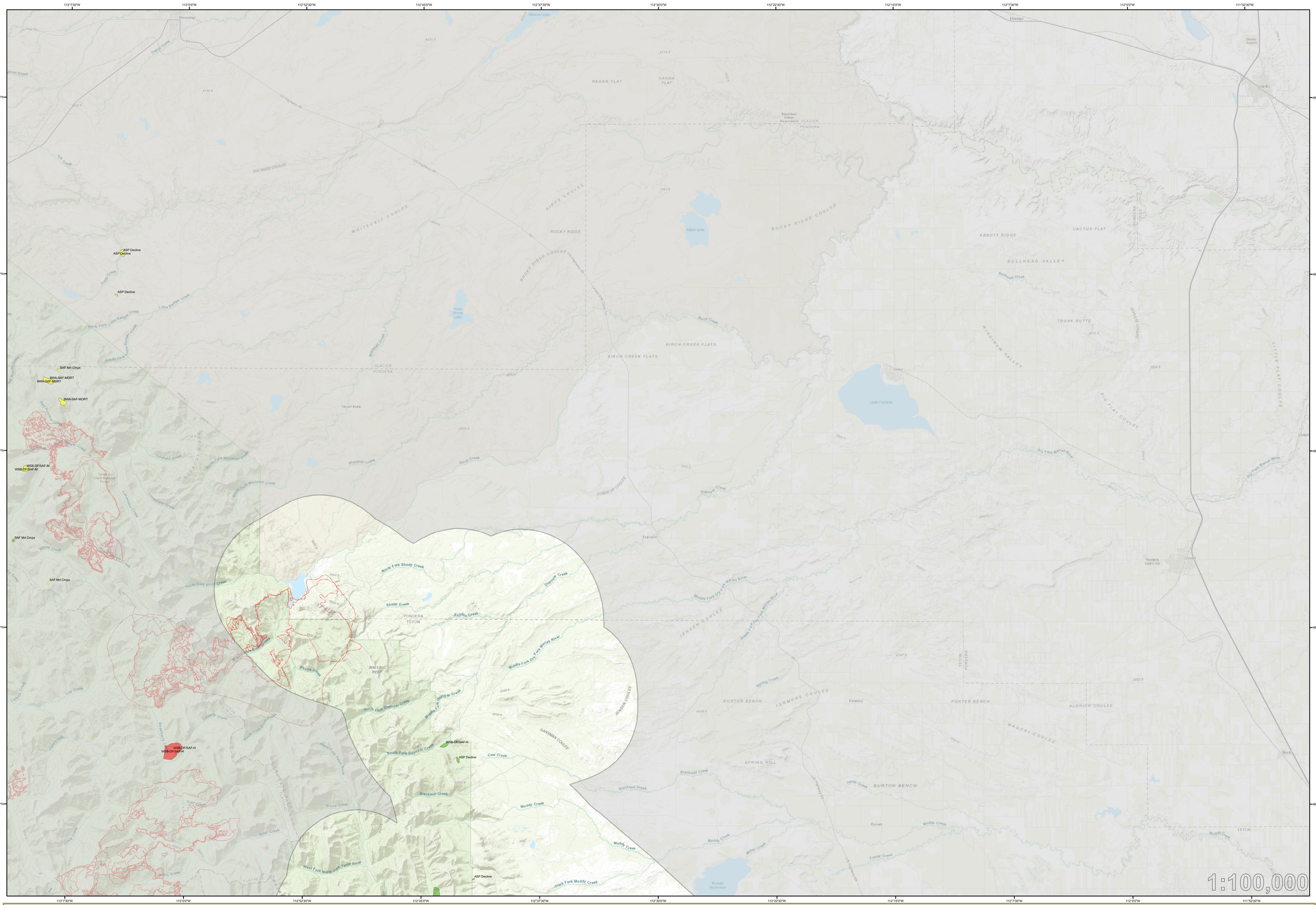
2018 Aerial Insect and Disease Survey
Valier, Montana



Legend

Damage Points

Number of Trees

- 1 - 5
- 6 - 30
- > 30

Damage Polygons

Percent Affected

- Light (1-10%)
- Moderate (11-50%)
- Severe (>50%)
- Not flown
- Fire Perimeters (2016 - 2018)

CODING SYSTEM

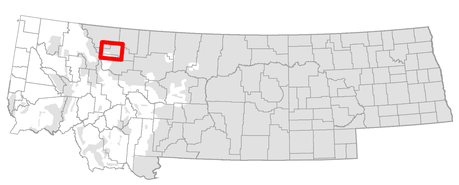
Codes have two parts: the first represents the causal agent and the second represents the host. If needed, the two-part code is followed by an 'M' or 'H' to indicate severity of the activity. Data is color coded to represent the intensity of activity as seen in the legend.

Examples:
MPB-LPP represents mountain pine beetle in Lodgepole pine.
WSB-DF/SAF-H represents western spruce budworm infestation in subalpine fir/Douglas-fir mix with >75% of leaves defoliated.

Causal Agent Codes	
Abiotic	
ASP Decline	Aspen Decline
ASP Dieback	Aspen Dieback
Drt	Drought
Flood	Flooding-high water
SnowBrk	Snow/ice
Wind-All	Wind-tornado
Wint Inj	Winter injury
Bark Beetles	
DFB	Douglas-fir beetle
ESB	Engelmann Spruce beetle
FEB	Fir engraver beetle (GF)
IPS	Pine engraver beetle
MPB	Mountain pine beetle
WPB, West PB	Western pine beetle (PP)
Defoliators	
??Def, Defol	Unknown defoliator
BWA	Balsam wooly adelgid (SAF)
Larch Saw	Larch sawfly
WSB	Western spruce budworm (DF/SAF)
Disease	
??Disc, ??Flag	Unknown Foliage or Shoot Disease
??Root	Unknown Root Disease or Decay
DipCank	Diplodia Canker
Lopho	Lophodermella Needle Cast of Pines
Marss Blt	Marssonina Blight
SAF Mrt Cmpx	SAF mortality complex
WL_Ndl Cst	Western lanrch needle cast
WPBR	White pine blister rust

Host Codes	
ASP	Aspen
CON, CNF	Unknown conifer
DF	Douglas-fir
ES	Engelmann spruce
GF	Grand fir
HWD	Unknown hardwood
Larch	Western larch
LIM	Limber pine
LP, LPP	Lodgepole pine
PC	Plains cottonwood
PP	Ponderosa pine
SAF	Subalpine fir
WBP	Whitebark pine
WRC	Western redcedar
WWP	Western white pine
Miscellaneous	
H	Defoliation - Heavy (> 75% of leaves defoliated)
M	Defoliation - Moderate (50-75% of leaves defoliated)
TpK	Top kill
FLAG	Flagging
MORT	Mortality

Region 1 - Location Map
USGS 100K Quad
USGS 100K TOPO!: 48112-A1
Valier, Montana



Legend

- Counties
- Flown
- R1 Boundary

HOW THE AERIAL SURVEYS ARE CONDUCTED

Data represented on this map are based on trees visibly affected by forest insects, diseases and abiotic factors that are detected and recorded by observers during aerial survey flights. These flights are conducted by a joint partnership between the USDA Forest Service and state cooperators.

Observers have just a few seconds to recognize characteristic signatures of healthy and damaged trees of different species, correctly diagnose damage causal agents, estimate the intensity or extent of damage, and precisely record information on a digital sketch mapping platform. 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.

Annual aerial surveys provide important information on the current status of detected causal agents and can be used to determine trends in damage levels over time by comparing previous and current survey data over large areas.

Map Created: 3/5/2019
Projection: UTM NAD83 Zone 12U
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DISCLAIMER

The digital map layer 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.