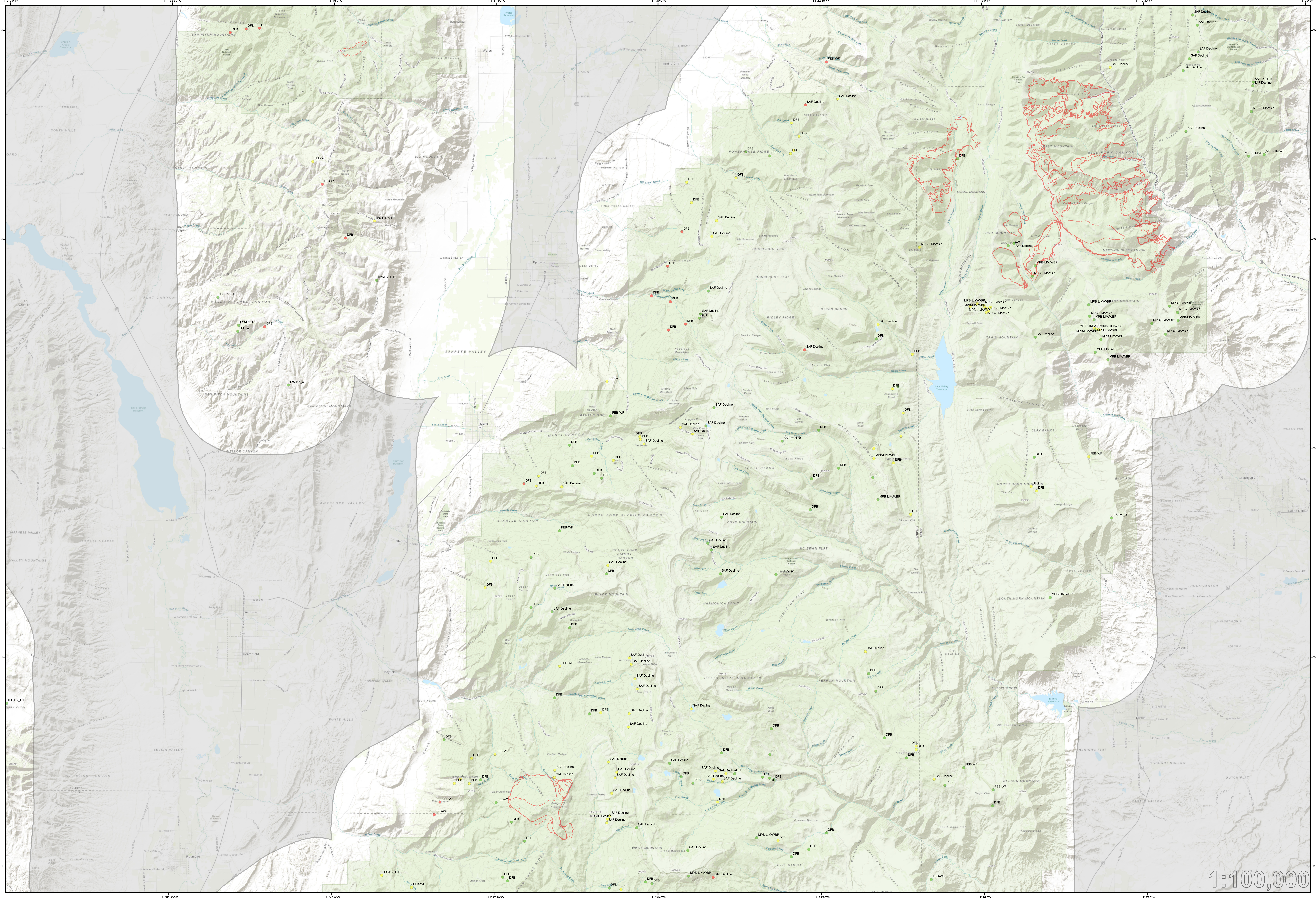
2019 Aerial Insect and Disease Survey
Manti, Utah



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 Defol	Aspen Defoliation
ASP Diebck	Aspen Dieback
ASP Mort	Aspen Mortality
Avalnch	Avalanche
Drght	Drought
Flood	Flooding-high water
Lnd Sld	Land Slide

Bark Beetles	
DFB	Douglas-fir beetle
ESB	Engelmann Spruce beetle
FEB	Fir engraver beetle
IPS	Pine engraver beetle
Jeffrey PB	Jeffrey Pine Beetle
MPB	Mountain pine beetle
RndHd PB	Roundheaded Pine Beetle
WPB	Western pine beetle

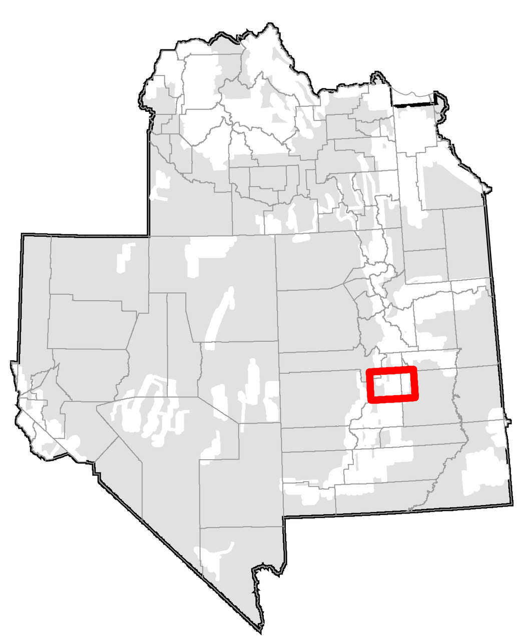
Defoliators	
BWA	Balsam wooly adelgid
DFTM	Douglas-fir Tussock Moth
FCW	Fall Cankerworm
FTC	Forest Tent Caterpillar
Marssonina	Marssonina
Satin_Moth	Satin Moth
WSB	Western Spruce Budworm
WTentCat	Western Tent Caterpillar

Disease	
Blck Pleaf	Black Pinleaf
Lopho	Lophodermella needle cast (LPP)
Scl	Scale
SAF Decl	Sub Alpine Fir Decline
WPBR	White pine blister rust

Host Codes	
ASP	Aspen
COT	Cottonwood
DF	Douglas-fir
GF	Grand fir
HWD	Hardwood
Jeffrey P	Jeffrey pine
JUN	Juniper
LIM/WBP	Limber pine / Whitebark pine
LP	Lodgepole pine
OAK	Oak
PP	Ponderosa pine
PY	Pinyon
RF	Red Fir
SAF	Subalpine fir
WF	Western larch
WIL	Willow

Miscellaneous	
Defol	Defoliation
M	Defoliation - Moderate (50-75% of leaves defoliated)
H	Defoliation - Heavy (> 75% of leaves defoliated)
Disc	Discoloation
Flag	Flagging
NV	Nevada
Rust	Rust
TpK	Top kill
UT	Utah

Region 4 - Location Map
USGS 100K Quad
USGS 100K TOPO!: 39111-A1
Manti, Utah



Legend
- Counties
- Flown areas
- R4 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: 2/5/2020
Projection: UTM NAD83 Zone 12S
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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.