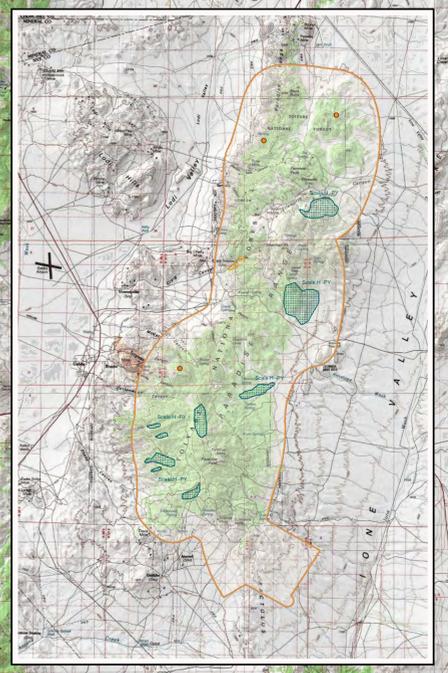
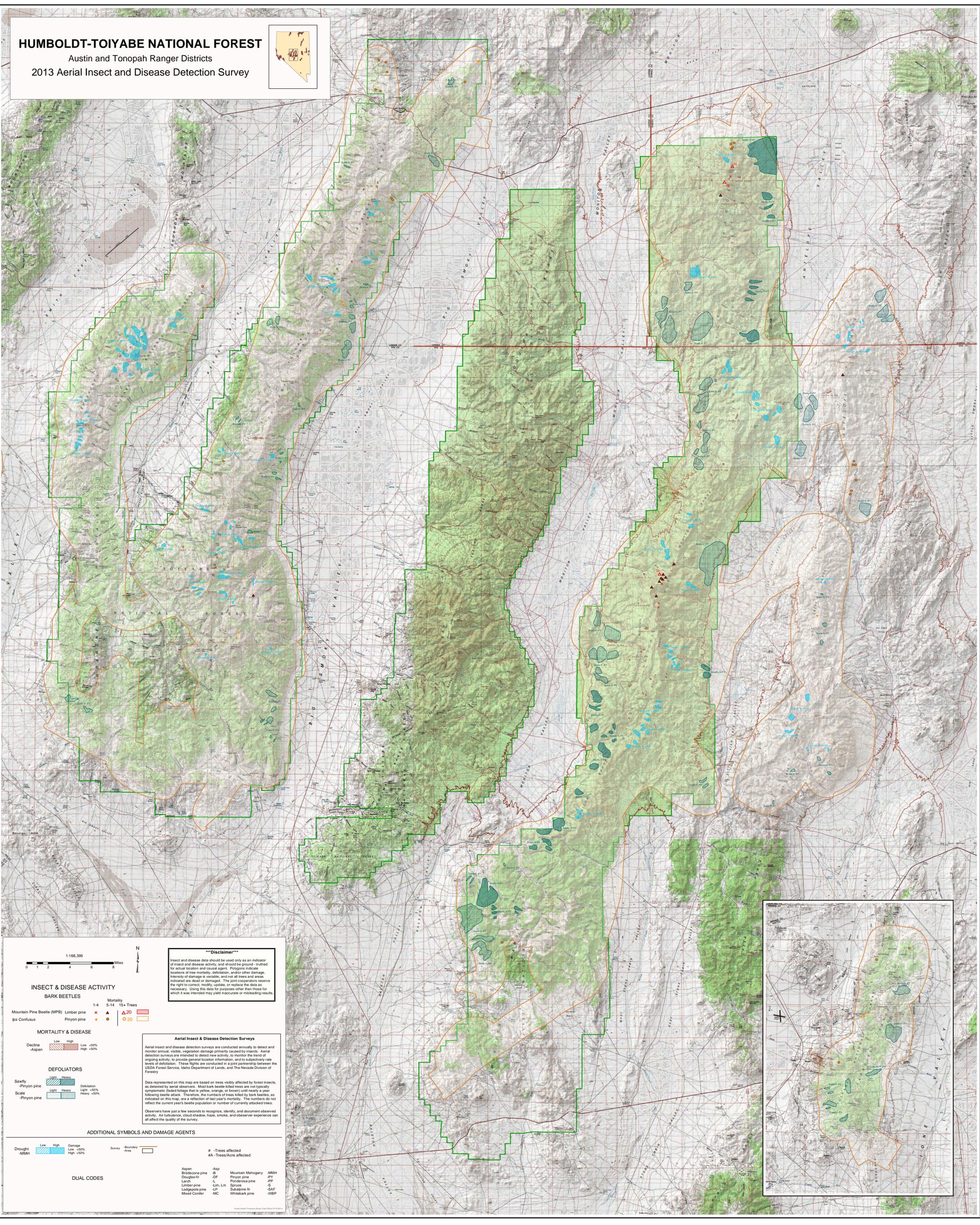


# HUMBOLDT-TOIYABE NATIONAL FOREST

Austin and Tonopah Ranger Districts

2013 Aerial Insect and Disease Detection Survey



**\*\*\*Disclaimer\*\*\***  
 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.

### INSECT & DISEASE ACTIVITY

**BARK BEETLES**

Mountain Pine Beetle (MPB) x ▲ ▲20  
 Ips Confusus ● ●20

Mortality  
 1-4 x ▲ ▲20  
 5-14 ● ●20  
 15+ Trees ▲ ●

### MORTALITY & DISEASE

Decline -Aspen  Low  High  
 Low <50%  High >50%

### DEFOLIATORS

Sawfly -Pinyon pine  Light  Heavy  
 Scale -Pinyon pine  Light  Heavy  
 Defoliation Light <50%  Heavy >50%

**Aerial Insect & Disease Detection Surveys**  
 Aerial insect and disease detection surveys are conducted annually to detect and monitor annual, visible, vegetation damage primarily caused by insects. Aerial detection surveys are intended to detect new activity, to monitor the extent of ongoing activity, to provide general location information, and to subjectively rate levels of defoliation. These figures are conducted in a joint partnership between the USDA Forest Service, Idaho Department of Lands, and The Nevada Division of Forestry.

Data represented on this map are based on trees visibly affected by forest insects, as detected by aerial observers. Most bark beetle-killed trees are not typically symptomatic (faded foliage that is yellow, orange, or brown) until nearly a year following beetle attack. Therefore, the numbers of trees killed by bark beetles, as indicated on this map, are a reflection of last year's mortality. The numbers do not reflect the current year's beetle population or number of currently attacked trees.

Observers have just a few seconds to recognize, identify, and document observed activity. Air turbulence, cloud shadow, haze, smoke, and observer experience can all affect the quality of the survey.

### ADDITIONAL SYMBOLS AND DAMAGE AGENTS

Drought -MMH  Low  High  
 Damage Low <50%  High >50%

Survey -Area

# - Trees affected  
 #A - Trees/Acre affected

**DUAL CODES**

Aspen	-Asp	Mountain Mahogany	-MMH
Balsam poplar	-B	Pinyon pine	-PY
Douglas-fir	-DF	Ponderosa pine	-PP
Larch	-L	Shrub	-S
Limb. Lim	-Lim_Lm	Subalpine fir	-SAF
Lodgepole pine	-LP	Whitebark pine	-WBP
Mixed Conifer	-MC		