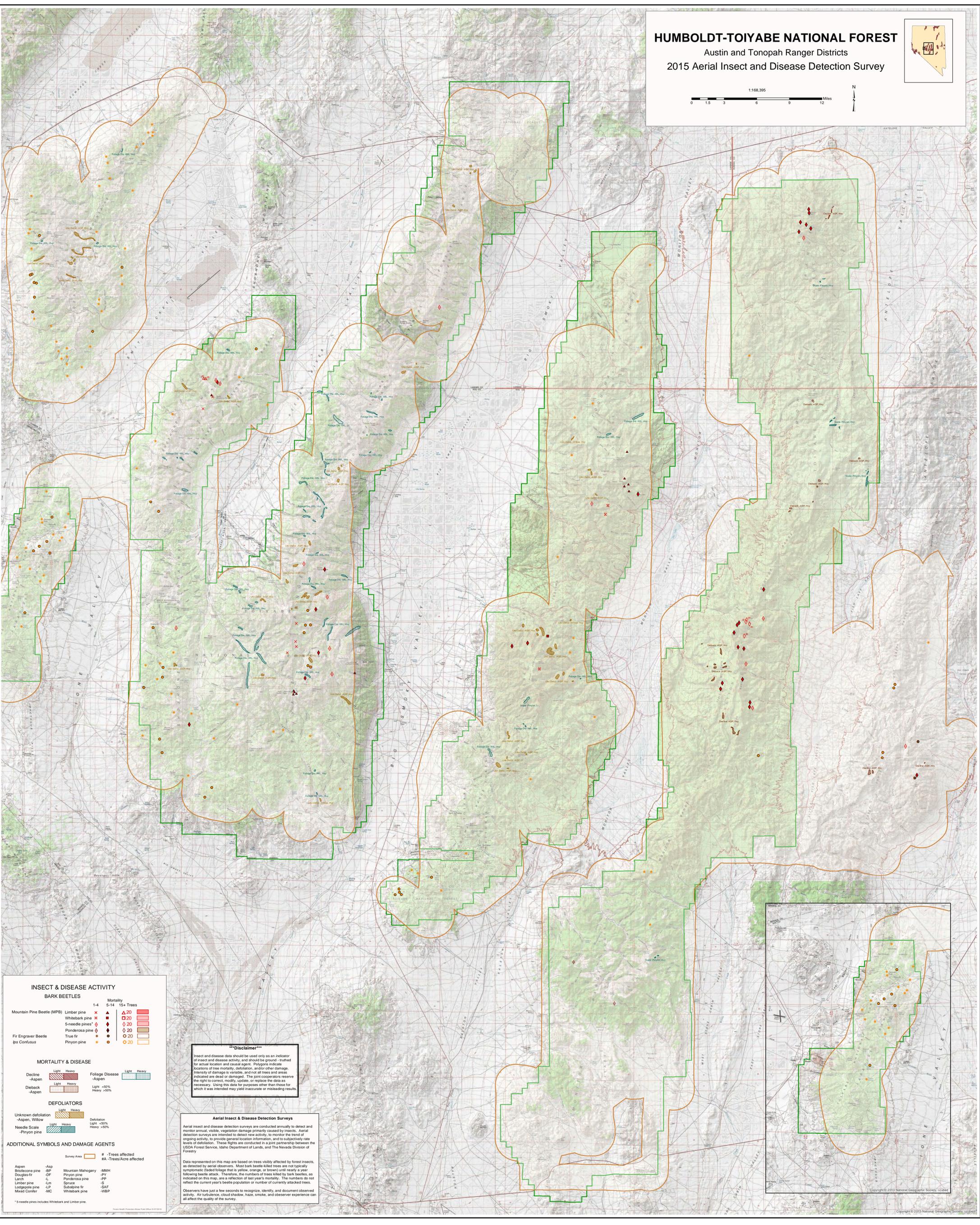


HUMBOLDT-TOIYABE NATIONAL FOREST

Austin and Tonopah Ranger Districts
2015 Aerial Insect and Disease Detection Survey



INSECT & DISEASE ACTIVITY

BARK BEETLES

	Mortality 1-4	Mortality 5-14	Mortality 15+ Trees
Mountain Pine Beetle (MPB)	△	▲	■
Whitebark pine	×	◆	■
5-needle pines*	◇	◆	■
Ponderosa pine	◇	◆	■
Tree fir	◇	◆	■
Pinon pine	◇	◆	■

*5-needle pines includes Whitebark and Limber pine.

MORTALITY & DISEASE

Decline -Aspen	Light Heavy	Foliage Disease -Aspen	Light Heavy
Dieback -Aspen	Light Heavy	Light <50%	Light Heavy
		Heavy >50%	

DEFOLIATORS

Unknown defoliation -Aspen, Willow	Light Heavy	Defoliation Light <50%	Light Heavy
Needle Scale -Pinon pine	Light Heavy	Heavy >50%	

ADDITIONAL SYMBOLS AND DAMAGE AGENTS

Aspen	Asp	Mountain Mahogany	MMH
Balsam poplar	BSP	Pinon pine	PP
Douglas-fir	DF	Ponderosa pine	PP
Larch	L	Subalpine fir	S
Limber pine	LP	Whitebark pine	WP
Logan pine	LP		
Mixed Conifer	MC		

*5-needle pines includes Whitebark and Limber pine.

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.

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 trend of ongoing activity, to provide general location information, and to subjectively rate levels of defoliation. These flights 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 (barked 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.

