

Janice K. Brewer  
Governor

Scott Hunt  
State Forester

# Arizona State Forestry Division

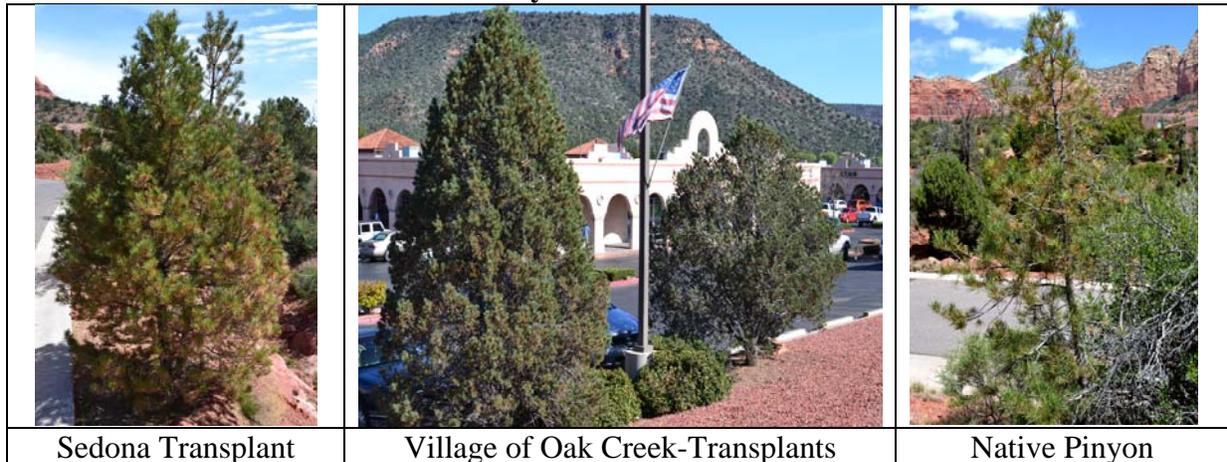
Office of the State Forester  
1110 W. Washington St., Suite 100  
Phoenix, AZ 85007  
(602) 771-1400



## 2013 FOREST HEALTH CONDITIONS REPORT STATE AND PRIVATE LANDS

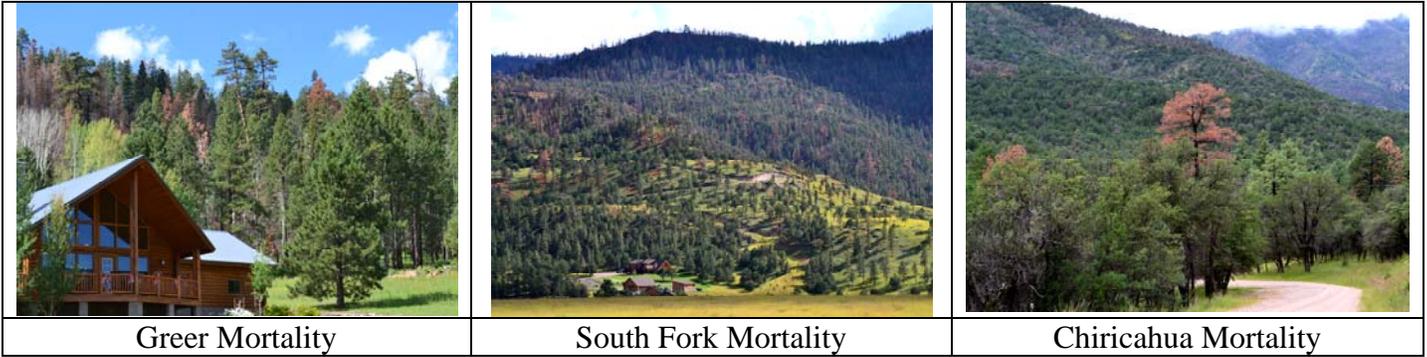
The rapid spread of a defoliating insect in the pinyon-juniper woodland in several areas of the state, was the biggest forest health concern noted in 2013 on state and private lands. The pinyon pine transplanted from Oregon, which was detected in the Uptown Sedona area in 2012 thoroughly infested with pinyon needle scale, was just the tip of the proverbial iceberg. The scale insect had never been identified in this area before, but was found in several locations on transplants in 2013, and has begun spreading into the surrounding woodland. It was also detected heavily infesting transplanted pinyons in the Village of Oak Creek.

### Pinyon Needle Scale

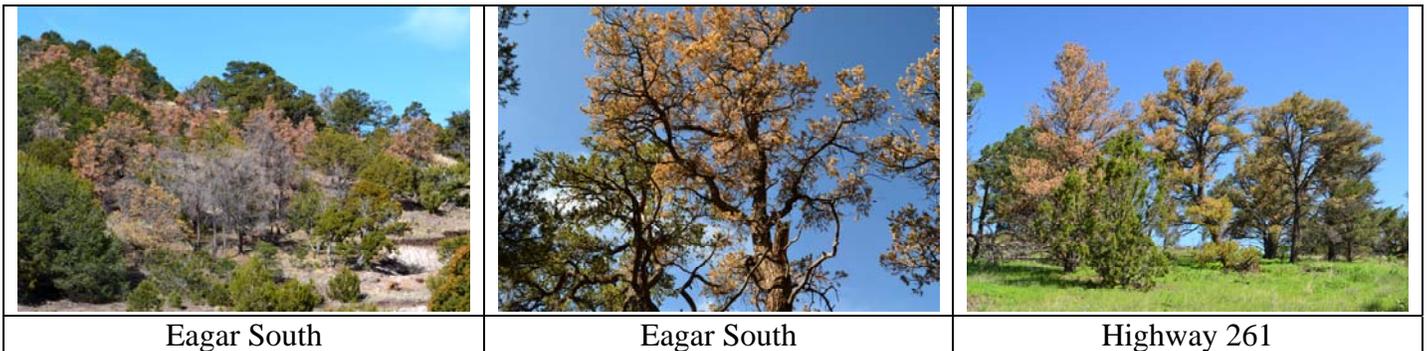


Bark beetle activity along the boundaries of the 2011 Wallow Fire became very noticeable in 2013, primarily on fire-damaged ponderosa pines but also on undamaged pines. This was expected 2-3 years after the fire and was mainly visible in the South Fork area west of Eagar, and also in the community of Greer on the south and southeast side of town. Extensive mortality of pines caused by bark beetles, following the 2011 Horseshoe 2 fire in the Chiricahua Mountains, was also reported in 2013.

## Bark Beetles



Piñon Ips bark beetles which were detected in late August 2012 following the Wallow Fire in 2011, causing extensive mortality of pockets of pinyon pine mainly on the south side of Eagar, largely subsided in 2013. The beetles infested fire-damaged pinyons and quickly spread to surrounding unburned trees in 2011. The eruption of these bark beetles so quickly after the fire and the apparent subsidence of the population in 2013 were unexpected. However, overwintering Piñon Ips bark beetles collected in March 2013 from the area, were heavily infested with mites and nematodes.

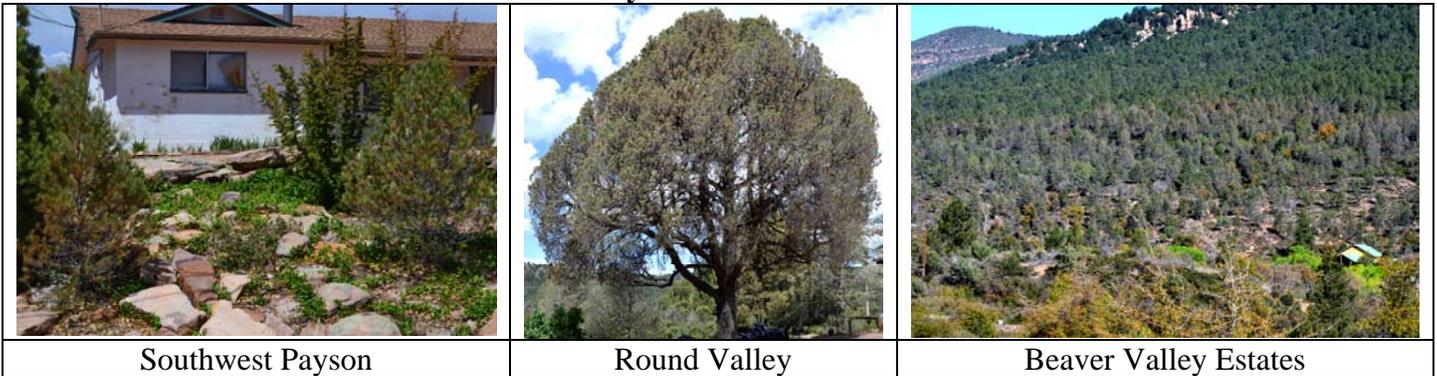


No noticeable post-Doce fire piñon Ips bark beetle activity was detected along the interface, on unburned trees in Williamson Valley north of Prescott in early September, following the fire in June 2013.

Two sites were identified in summer in eastern Arizona, where red turpentine beetles were actively infesting ponderosa pines. This bark beetle is usually secondary and was very likely attracted to the pines, by the application of volatile wood preservative products to the homes.

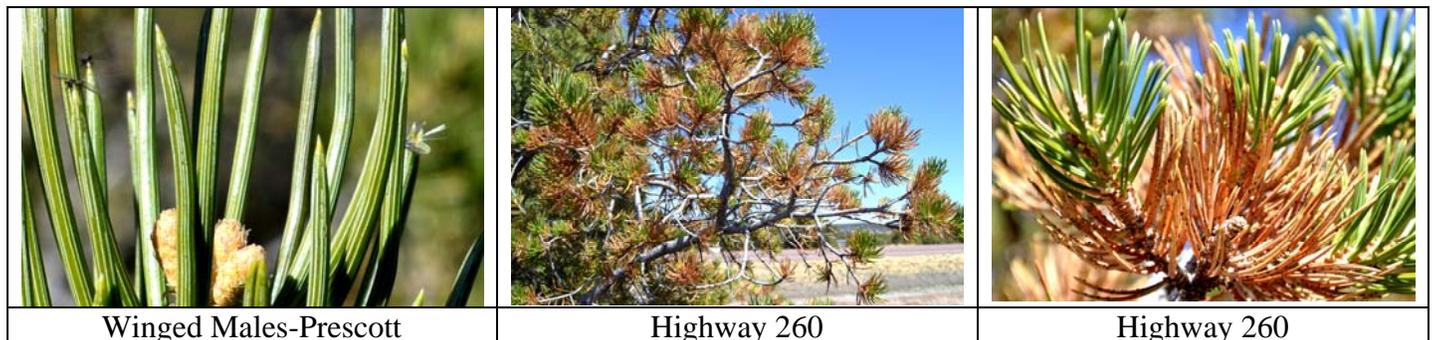
The pinyon needle scale infestation first noted in southeast Payson in 2007, spread into several new areas in town--mainly on the southwest side in 2013. The population that was detected in 2008 in the community of Round Valley in Gila County also spread dramatically to the northwest. In addition, the infestation that was first observed in Beaver Valley Estates north of Payson in late 2007, also expanded to the southwest along the fuel break in 2013.

### Pinyon Needle Scale



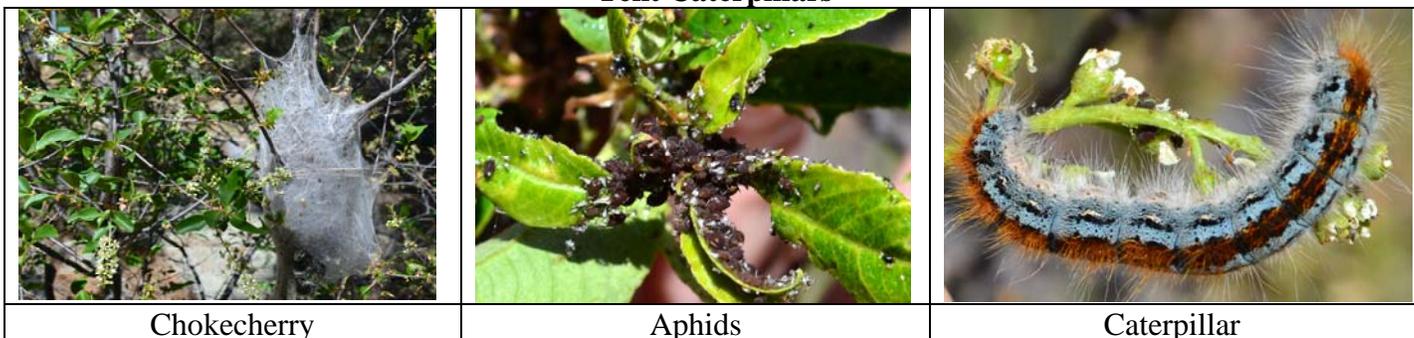
This complex insect is also very well established in the Prescott area and can be found spread over thousands of acres, from Prescott Country Club to the Prescott Basin and to Williamson Valley all the way north to Hootenanny Holler. A swarm of emerging winged male pinyon needle scale was detected in early March in the Williamson Valley area, and was very likely a reflection of the heavy infestation in the area. The males are typically solitary in their search for female scales in late winter and early spring.

A smaller pocket of scattered pinyons infested with needle scale was also detected along both sides of highway 260, west of the turnoff to Clay Springs in Navajo County in late March. This is a new population.



Widespread tent caterpillars activity was first noted in early May in the Prescott area mainly on chokecherry. In addition in one infested site in town, the chokecherries were also heavily infested with aphids. Even though the chokecherries were almost totally defoliated by the tent caterpillars and the aphids were feeding on the remnant leaves, the plants were very resilient and quickly refoliated once the insects were gone. Tent caterpillars were next detected on the Catalina Mountains mainly on aspen in late May. Most of their activity in 2013 shifted up the mountain starting from just below Summerhaven to Mount Lemmon above the Ski Lift. Also in May widespread defoliation of ornamental aspens and Gambel oak was visible in the Show Low area. Finally, very noticeable tents on ornamental aspens were noted in west Flagstaff in mid-June, with many of the defoliated aspens unable to replace their leaves by late summer. In addition, the caterpillars heavily defoliated scattered three-leaf sumac bushes in east Flagstaff along the I-40 corridor.

### Tent Caterpillars



A fall webworm female moth was found laying eggs on an Arizona walnut just west of Vernon in late June for the second year in a row. Populations of these insects were again detected later in summer in Eagar and Show Low on a number of hosts, but were not as widespread as in 2012. The insect was also found feeding on a new host in the Linden area—Siberian elm. They were also very common in northern Gila County feeding mainly on AZ walnut, but were found for the first time in August on an ornamental redbud tree.

The new detection of fall webworm on the Catalina Mtns in 2012 on AZ walnut, was followed up in August 2013 with the identification of the insect for the first time, on AZ alder in the community of Summerhaven. They were again found feeding on elderberry west of the Blue Ridge area in Coconino County, and confirmed on willow south of Flagstaff by the overlook on I-17 in 2013.

### Fall Webworm



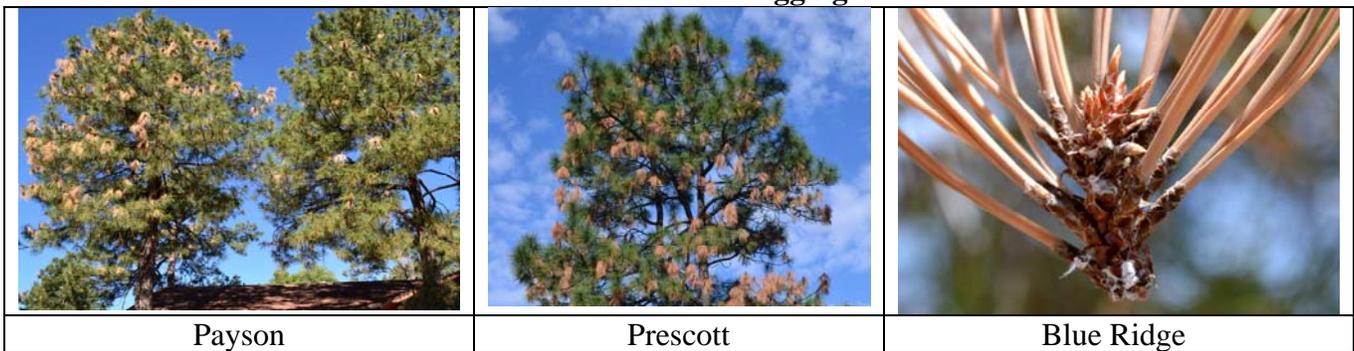
Pine sawfly caterpillars first identified in 2012, continued to expand in the Summerhaven area of the Catalina Mountains in late July 2013. No mortality has been detected to date, but this may change due to the annual defoliation of the smaller understory ponderosa pines. Sawflies tend to persist and spread in an area for several years.

The native leafhoppers which have been discoloring and defoliating Arizona walnuts in northern Gila County in summer for several years, were not noted in large numbers until late summer, and may have been inhibited by the heavy rains experienced in early September. They were also not as widespread in other parts of the state identified in 2012.

Scattered flagging/dieback of ponderosa pine branches on larger trees was detected in southeast Payson late in 2012. It was also seen scattered in several other areas around town in 2013. Although the cause was never confirmed, Prescott scale is suspected and no tree mortality has been observed

Prescott scale flagging on ponderosa pine was confirmed in several communities in Prescott, including Forest Trails, Kingswood Estates and Rancho Vista Hills in 2013. It has been identified in this area in the past. It was also found in the Blue Ridge area in Coconino County in July 2013 and has also been reported in this area in previous years. Scattered flagging was mainly noted in the communities of Mogollon Ranch, Starlight Pines and Blue Ridge Estates, and the insect was heavily flagging ponderosa pines between Clear Creek Pines Units One and Two.

**Ponderosa Pine Flagging**



Also in the Blue Ridge area in late May, the presence of ponderosa pine needle miner was detected southeast of the community on private and Forest Service lands. This insect was observed causing noticeable discoloration of ponderosa pines mainly along meadows. But along with the needle miners, the same pines were also heavily infested with conifer aphids. The aphids were accompanied by predatory Lady and soldier beetles and snakeflies. Also the shiny honeydew produced by these aphids could be seen for miles starting in Clints Well indicating very large populations in the forest.

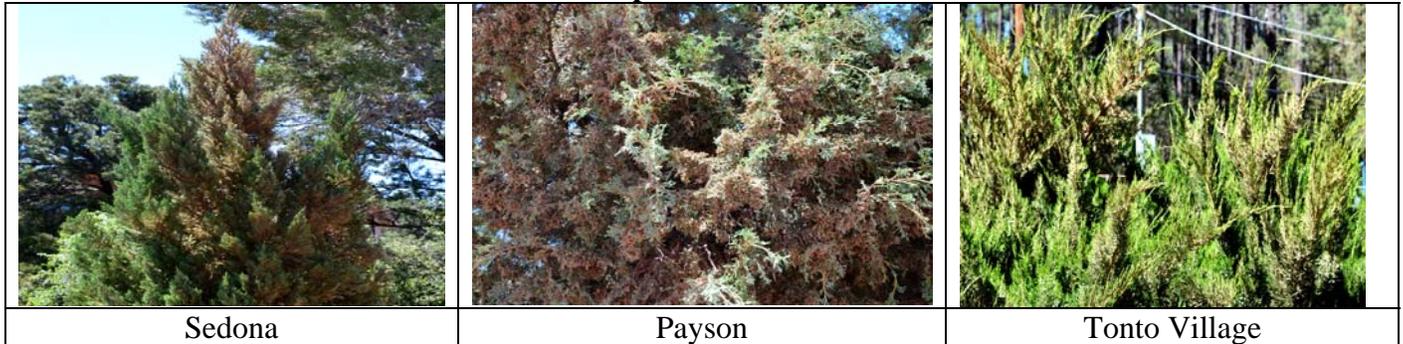
**Ponderosa Pine Needle Miner**



A pocket of heavily flagged ponderosa pines caused by dwarf mistletoe infestations was detected in the community of Pine Lake in the Hualapai Mountains in late August 2013. But by late September the pines had largely recovered following some very heavy rainfall in the area.

Spider mites were detected in Sedona, Payson and eastern Gila County on native and ornamental junipers and cypress in May and June, heavily webbing and discoloring individual plants. Spider mites are most active during the hottest and driest days in early summer, but their populations usually subside following the arrival of the monsoon rains.

### Spider Mites



Finally in mid-September and early October, a new caterpillar was observed causing heavy defoliation of box elder trees growing along Cave Creek Canyon in the Chiricahua Mountains. It was identified as a Maple Tussock caterpillar, and has been reported in other southeast Arizona mountain ranges in the past.

### Maple Tussock Moth Caterpillar



A variety of miscellaneous insects, pathogens and non-native invasive plants were also encountered in 2013. A new invasive plant was discovered in May in Payson called Henbit, and the return of another invasive plant to the Payson, Prescott and Sedona areas called Blue Mustard, was also observed. Woolly oak aphids were discovered feeding on Gambel oak leaves at the entrance to Woodland Lake Park in Pinetop in late June. A willow scale was noted in Nutrioso also in late June producing honeydew which attracted an assortment of wasps, hornets, flies and butterflies.

A large patch of stubby needle gall midges was detected deforming the needles on small ponderosa pines along the Catalina Highway in July. Also in the area scattered false webworm nests were seen on some of the same ponderosa pines with the galls. Nodding thistle plants was widely scattered on the southeast side of Greer in an area severely burned by the Wallow fire. Red-humped caterpillars were found for the first time feeding on AZ walnut in the Linden area.

**Invasive Plants**

		
Henbit-Payson	Blue Mustard-Prescott	Nodding Thistle-Greer

**Miscellaneous Insects**

		
Woolly Oak Aphids	Stubby Needle Gall Midges	Red-humped Caterpillars

Very striking fruiting bodies of a fungus commonly named chicken of the woods was observed in early September in Prescott on the trunks of some very large white poplars. The trees had been severely topped a few years ago and the fungus was decomposing the trunks. A very imposing bright green solitary caterpillar, which turns into a large Polyphemus moth, was noted on a walnut tree in Prescott also in early September. Unknown Gambel oak leaf discoloration and defoliation was noted in one community, on a group of large trees in the Prescott area in early September. Also unknown was the cause for the pocket of five dead large Ephedra Mormon tea trees, on the northwest slopes of the Hualapai Mountains southeast of Kingman. Additional scattered dead Ephedras were also noted in the area in late September.

Another very large and imposing solitary caterpillar called a Typhon sphinx was identified in Cave Creek canyon in the Chiricahuas, in early October feeding on wild grape. Walnut pouch gall mites were still around in the Chiricahuas in 2013.

### Miscellaneous

		
Polyphemus Caterpillar	Chicken of the Woods-Fungus	Typhon Sphinx Caterpillar

The very wet monsoon experienced in 2013 in most areas of the state, very likely contributed to the presence of many of the insects, pathogens and invasive plants seen during the year.

For further information about any of the detections in this report, contact Bob Celaya, Forest Health Specialist, Arizona State Forestry Division at 602-771-1415 or [bobcelaya@azsf.gov](mailto:bobcelaya@azsf.gov)

You can also contact John Richardson, Forest Program Coordinator at 602-771-1420 or [JohnRichardson@azsf.gov](mailto:JohnRichardson@azsf.gov)