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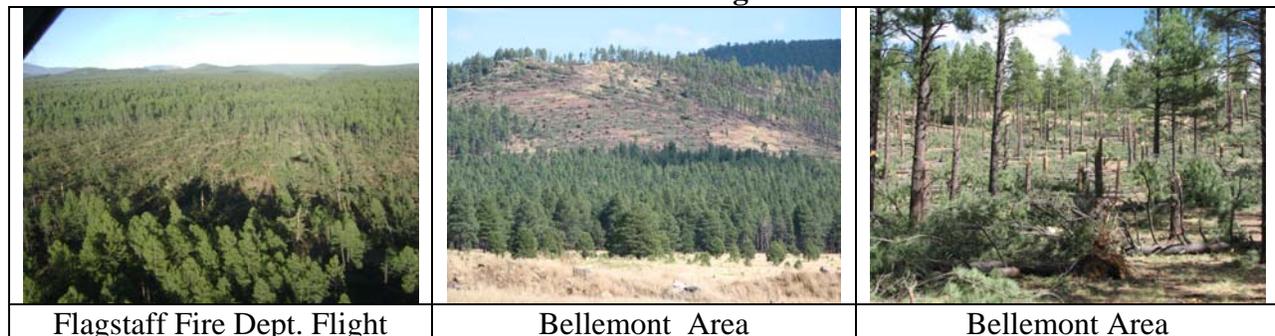
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## 2010 FOREST HEALTH CONDITIONS REPORT STATE AND PRIVATE LANDS

The most dramatic event affecting forest health in 2010 was the unprecedented amount of destruction to the forests west of Flagstaff, caused by multiple tornados on October 6<sup>th</sup>. A conservative estimate of about 5600 acres on all ownerships may have been seriously damaged. Also additional standing pine trees adjacent to the tornado damage have been affected, and may also prove attractive to bark beetle activity next spring. The potential exists to greatly increase the number of bark beetles in all damaged trees, which could also infest surrounding standing, healthy pines. Efforts are underway to treat some of the damaged pine stands, in the hopes of reducing future bark beetle populations and preventing forest fires.

### Tornado Damage



Up until the tornados struck in October, the most significant event affecting the health of our forests was the widespread storm damage that occurred last winter. It was more widespread than the amount of damage noted in 2009 and affected more species of trees including ponderosa and pinyon pine, Douglas-fir, several oak species, juniper, ash and willow. Windthrow, windbreak and snowbreak were identified from Prescott to Upper Oak Creek Canyon, Flagstaff to Blue Ridge, and Payson to Pine-Strawberry; Forest Lakes, Heber-Overgaard and Pinetop. And for the second consecutive year, the community of Summerhaven in the Catalina Mountains suffered the greatest damage, with several structures struck by falling trees. The additional damage to this community was exacerbated by the highly destructive Aspen forest fire in 2003.

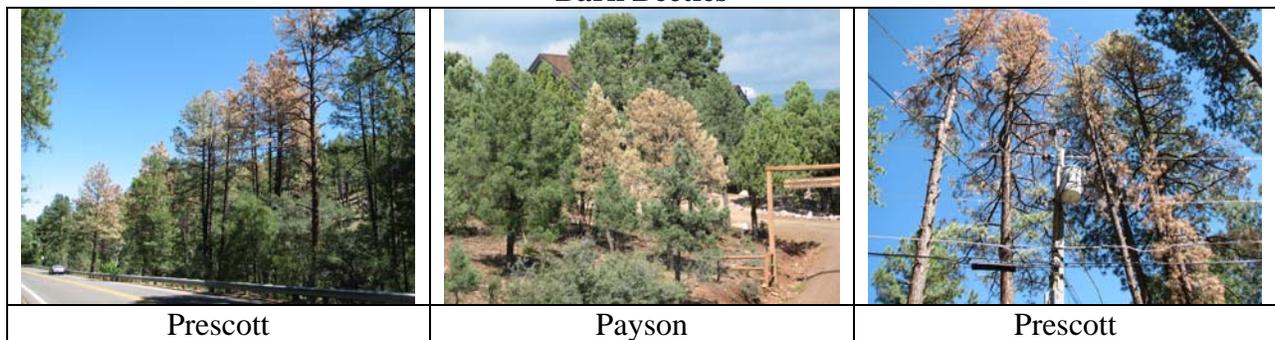
An interesting phenomenon was noted in the Payson and east Flagstaff area, where two uprooted pinyons were still alive at the end of summer.

### Storm Damage



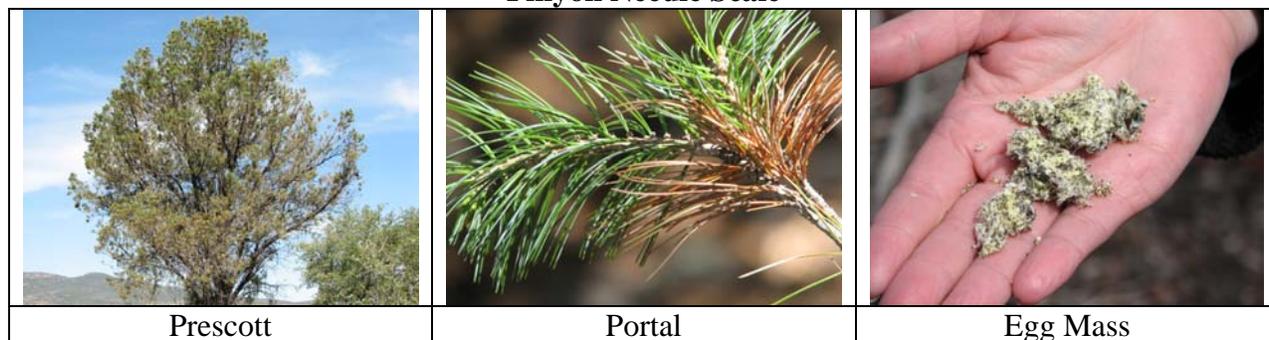
Bark beetle activity was on the increase for the second consecutive year in the Payson and Prescott areas in September. Ponderosa and pinyon pines scattered throughout these communities were killed by these insects. The storm damage that occurred over the winter probably contributing to the increase. The damaged pines were excellent breeding material for bark beetles. Additional bark beetle activity was also noted around areas that had been thinned and burned for fire prevention reasons. And trees damaged by the Hardy and Schultz fires in the Flagstaff area in June, will also increase their numbers in that area. And even though bark beetle activity statewide still continues at low levels, the La Niña forecast for this winter of below normal precipitation and above normal temperatures, can only add to the likelihood of an increase in bark beetle activity next year. Implementation of bark beetle prevention methods should be included in all forest management practices in 2011.

### Bark Beetles



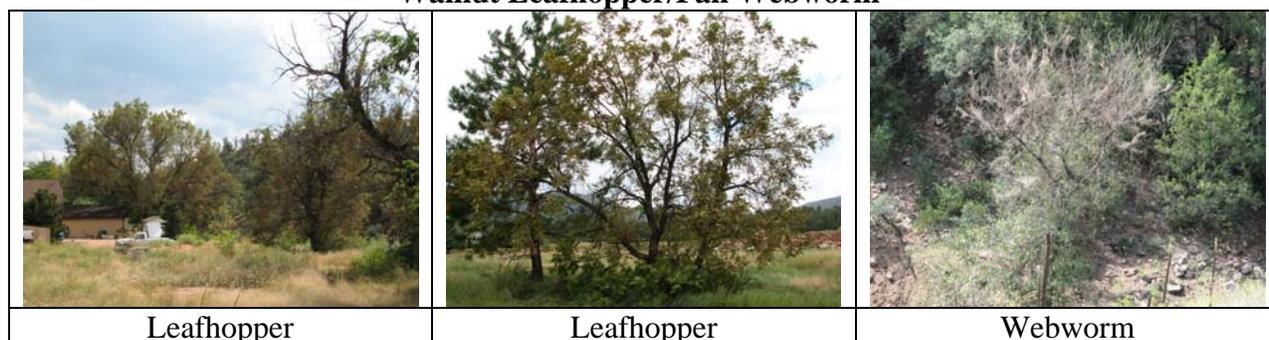
Pinyon needle scale populations expanded in the Payson area in 2010. This defoliating insect appeared abruptly in 2007, and has also been detected in two surrounding communities. The native insect is also widespread throughout the Prescott area covering thousands of acres. And it was identified for the first time on small pinyons in the community of Portal, in the Chiricahua Mountains in May. Additional aerial detection survey flights in 2010 identified thousands of acres of infested pinyons in Navajo and Apache counties, mainly in remote areas.

### Pinyon Needle Scale



A native leafhopper discolored and defoliated walnuts in the Star Valley and Pine areas in September and early October 2010. This is the second consecutive year for high populations of these insects. Extensive “leafhopper burn” of Arizona walnuts was first observed in Star Valley in 2005. It was also very widespread in 2009 in Gila County and other parts of the state. Up until now the insect was not considered a major forest health concern, due to the fact that the defoliation occurred late in summer, just before the walnuts normally shed their leaves. However, many of the walnuts damaged by leafhoppers were also infested with fall webworms earlier in summer. A third consecutive year of heavy defoliation by both insects may start to cause mortality of small trees and twigs and branches of larger walnuts in 2011.

### Walnut Leafhopper/Fall Webworm



White pine blister rust continued to spread in the White Mountains following its first discovery in 2009, along the road to Hawley Lake. Several other infected sites have been identified, mainly along drainages where moisture conditions are ideal for the spread of this complex, and non-native disease. Highly susceptible white pines are being damaged by the disease and will probably succumb in the near future. Long term, resistant pines are likely to survive the disease and produce new seedlings. The rust was not found on private lands on white pines growing in the Greer and Alpine areas in 2010, but it’s probably just a matter of time. Unfortunately, prevention of this disease on white pines is not practicable.

### White Pine Blister Rust

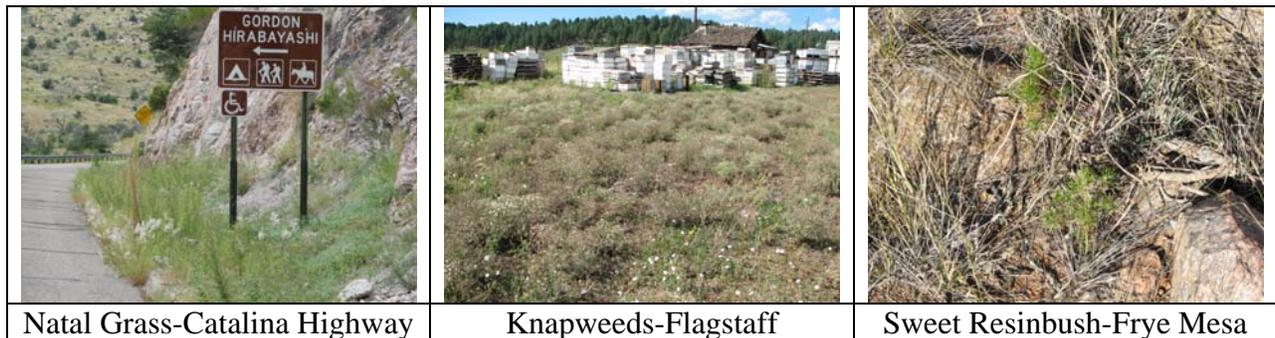


Non-native invasive plants were on the increase throughout our forests and woodlands in 2010. The white plumes produced by Natal grass were readily visible past Molino Basin along the Catalina highway in September, all the way up to the Gordon Hirabayashi turnoff. This is the highest altitude this imported grass from Africa has been detected along the highway, and may indicate its ability to grow at higher elevations.

Diffuse and spotted knapweeds in the Flagstaff area continue to spread, in spite of the intensive efforts to control them by the local weed management group. Biological control methods utilizing insects that feed on knapweeds, and collected in the country of origin for the plants have been released in the area. They may hold the best promise of reducing long term the populations of these invasive plants.

Sweet resinbush identified on Frye Mesa years ago on the north side of the Pinaleno Mountains outside Safford, continues to be a concern in spite of the best efforts of the local weed management group. This plant imported from Africa in the 1930's for forage and erosion control, has become well established in this area. It also has the ability to outcompete native grasses and forbs and form a monoculture of sweet resinbush. Efforts need to continue for the foreseeable future to keep this plant from spreading. Prescribed fire appears to be a useful tool to manage this very invasive plant in this area.

### Invasive Plants



The usual assortment of miscellaneous insects, diseases and other forest pathogens were also detected in 2010. Fall webworm continued to defoliate an assortment of trees mainly in Gila County, but was also observed again in the Show Low area on walnuts. An uncommon root and trunk disease, which looked like foam on the tree, was identified in July on a honey locust planted in Star Valley. Tent caterpillars remained active on the Catalina Mountains on aspen and willow for the second consecutive year. A population of these insects was also detected feeding on cottonwoods in the Globe-Miami area in May. The large ponderosa pine sawfly outbreak first detected in 2007 between Overgaard and Pinedale was down to just a few scattered colonies, feeding on individual pine branches in 2010. A black ant (probably Carpenter) was noted in May, apparently clipping off the new buds on seedling ponderosa pines on the Catalina Mountains, and feeding on the resin exudation. A webworm was found feeding on pinyon needles and cones in the Hualapai Mountains in September. Comandra blister rust, an uncommon native disease of ponderosa pine, infected a sapling in the Prescott area.

### Miscellaneous Detections

		
Fall Webworm-Show Low	Honey locust-Star Valley	Tent Caterpillars-Aspen

		
Tent Caterpillars-Willow	Tent Caterpillars-Cottonwood	Pine Sawfly Defoliation

		
Carpenter Ants	Pinyon Webworm	Comandra Blister Rust

A walnut leaf pouch gall mite was noted in the Portal area, along with unusual brooming of pinyon pine needles. And finally, the severe weather that generated the tornados near Flagstaff in October also produced a localized hailstorm in Strawberry, which stripped the needles off of ponderosa pines.

### Miscellaneous Detections

		
Walnut Leaf Pouch Gall Mites	Pinyon Needle Brooming	Hailstorm Defoliation

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. [bobcelaya@azsf.gov](mailto:bobcelaya@azsf.gov)