

# High-tech wildfire detection in southwest Oregon

BY BRIAN BALLOU

A forest fire lookout station was first established on Tallowbox Mountain in 1918. Located in the Siskiyou seven miles south of the community of Applegate, the top of the 5,023-foot mountain provides a wonderful view of the Applegate River drainage and a few hundred square miles of rugged forest.

No one knows how many fires were spotted by Tallowbox's fire watchers over the past 95 years, but today it's not a man or woman with binoculars scanning the horizon for threads of smoke. The woods are now watched over by cameras that were installed on Tallowbox Mountain in 2009.

The one-room Tallowbox lookout cabin and its 30-foot tower were badly damaged by vandals in 2007. Replacing the structure would have cost several hundred thousand dollars, as was learned a couple of years earlier when the fire lookout on Sexton Mountain north of Grants Pass had to be replaced following a similar act of vandalism.

The cost of a mast-and-cameras setup is less than half the amount of replacing a traditional lookout tower, and the annual maintenance costs are lower. Plus, the cameras can keep their eyes open, without coffee, 24 hours a day. Each camera makes a 360-degree rotation every six minutes. The software that interprets the video signals from the cameras can tell

the difference between smoke and clouds or dust, and it quickly plots the exact location of any smoke it sees. When the camera detects a column of smoke, it sets off an alarm in the Oregon Department of Forestry's dispatch office in Central Point, drawing immediate attention to the video monitors that display whatever the cameras are seeing.

During a thunderstorm, dispatchers also monitor lightning strike locations on their computers. Lightning detectors are scattered all over the region, and each lightning strike's exact location is determined by triangulation. These strikes appear as little lightning bolts on maps displayed on a dispatcher's computer screen. (Sorry, the lightning detection imagery currently used by dispatchers isn't available to the public. The images are copyrighted by the company that wrote the software.)

A strike that is likely to cause a fire, called a positive strike, is noted on the map with a "plus" symbol. A dispatcher can then instruct the camera on a lookout to zoom into the area where the positive strike was located.

At the first sign of smoke, dispatchers send firefighters to the scene to extinguish the fire.

Early, accurate fire detection coupled with swift fire-suppression response has kept most (97 percent) of all wildfires under ten acres in size. However, the remaining three percent of fires cost the greatest amount of money to suppress and cause the greatest amount of damage. For this reason, more effort is being made to increase fire-detection speed and accuracy, and couple it with even faster fire-suppression response.

Today, two southwest Oregon mountaintops, Tallowbox and Manzanita, have towers with cameras, and other sites will soon be added to the lookout camera network.

When a thunderstorm is causing fires in the district, small airplanes are put into the air to help with the fire-spotting chores and to guide firefighters quickly to the scene of a blaze. Each plane has a pilot, of course, and a spotter. The spotter uses a map, binoculars and a GPS hand-held

device to accurately plot every smoke. The pilot takes direction from the spotter and puts the plane over the ridges and drainages so the spotter can get the best possible view of the territory. This can result in a pretty wild ride, and spotters need to not only have intimate knowledge of the country below and wildland fire suppression, but a strong stomach.

One day in the near future, it is hoped that firefighters will be aided by small drone aircraft that can fly around a fire and scout where firefighters may safely construct a fire line. But the development of that technology is still in its infancy.

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Photo above: Tallowbox fire lookout before being vandalized, torn down and replaced with a tower and cameras. Photo right: ODF's Bill Ostrander (at top) maintains the cameras mounted on the top of these towers. Photos: Oregon Department of Forestry.



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