

Land, Water and People

Dead trees do not equal more fires... maybe

By Mike Blakeman

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“Look at all those dead trees. That forest is going to burn and it is going to burn big,” said the man as he waved his arm towards Baldy Mountain.

The man and I were standing along the side of Highway 149 talking about the beetle-killed forest and fire risk. I agreed with the man that a big fire could occur any year on the mountain, but that it wouldn't happen because the trees were dead.

Two years later the Papoose Fire raced across Baldy Mountain putting up a plume of smoke tens of thousands of feet into the air. People spoke of the “unprecedented” fire behavior that was occurring due to the dead trees. And in the next breath they said, “I knew this would happen.”

It's easy – really, really easy – to draw this conclusion, but is it correct?

A study that came out a few years ago indicated there was no evidence that beetle-killed spruce-fir forests were more likely to burn than green spruce-fir forests. The study compared the frequency and sizes of fires in green forests to those that had been infested with spruce beetles over several decades. The authors of the study concluded the reason the dead forests didn't burn more often is because the spruce-fir forest grows in a “cool-moist” zone. In other words, it's usually too wet for small fires to build up a head of steam and grow into large wildland fires.

We had extreme fire conditions in June with a below average snowpack that melted quickly; several days with single digit relative humidity; and 50-60 mile per hour winds in the mountains. It wouldn't have mattered if the trees were green or dead, all we needed was an ignition source to produce a big fire, which we had in the form of dry lightning.

The fire behavior was extreme, which was to be expected considering the dry conditions and the weather. The Papoose Fire blew right through 800 acres of green spruce saplings in old clearcuts. Both the Papoose and West Fork Fires didn't even pause as they burned through several old timber sales. On the east side of the Valley, the Ox Cart Fire smoldered and punked around until the conditions dried out enough for it to blast through a 1000 acres of green trees in less than two hours. That fire then came to a screeching halt as it hit treeline and ran out of fuel.

Firefighters spoke of the extreme fire behavior they witnessed, but firefighters have been making those kinds of comments for the last decade as they worked fires in hot, dry, windy conditions in areas of large fuel build up – green and dead.

The evidence presented above doesn't mean the beetle-killed spruce didn't have an impact on fire behavior and the study mentioned above doesn't necessarily prove that the dead spruce don't increase the likelihood of large fires. Really, what it points to is that extreme conditions combined with plenty of fuels – green or dead – only need an ignition to create large wildland fires.

There are still a lot of unanswered questions about the impact of dense stands of beetle-killed spruce on fire danger (the likelihood of a fire starting) and fire behavior. Are the dead trees causing the snow to melt sooner leading to a longer drying period before the monsoons show up in July? Are the fine, dry twigs of dead spruce more likely to ignite and spread fire than the green

needles, which contain volatile oils, of live spruce? Does the wind move differently through the dead trees than the green trees causing more extreme fire behavior? These are just a few of the many unanswered questions scientists have.

One factor that seems to be consistently connected with large wildland fires is dry weather. There is much to discuss about periods of dry weather and fire, but that will need to be – dare I say – fuel for another Land, Water and People column.

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