

High Country News

For people who care
about the West

Why homes are lost to wildfire

by Melissa Mylchreest

Each year, wildfires claim hundreds of homes throughout the West in what's known as the wildland-urban interface. This issue roars into the national spotlight every summer as footage of engulfed subdivisions flickers on TVs across the country. National fire suppression budgets reach into the billions of dollars every year, much of that cost associated with protecting homes and structures. But are we approaching the problem from the right angle?

Jack Cohen is a research physical fire scientist with the U.S. Forest Service, based at the Missoula Fire Sciences Laboratory. With four decades of experience, he is a preeminent expert on wildfire and home ignitions, and a founder of the Firewise Communities recognition program, a project of the National Fire Protection Association that helps homeowners protect their property against wildfire.

Years of study have convinced Cohen that the loss of homes to wildfire is as much a sociopolitical problem as it is a physical, on-the-ground problem. Agencies and the public alike approach the issue as a question of fire suppression and control. Cohen, on the other hand, believes that fire is here to stay, and that proper mitigation, awareness and planning can make living with fire a whole lot easier - and safer. HCN contributor Melissa Mylchreest recently spoke with Cohen.

High Country News Every year, wildfires burn hundreds of homes in the wildland-urban interface. From an on-the-ground perspective, can you tell us how this happens?

Jack Cohen Our general perception that a fire comes rolling down a hillside and takes out a neighborhood, like a tsunami or a lava flow, just doesn't fit the physics of the problem. What I've found is that during these big crown fires, the flames pass by quickly, so the radiant heat doesn't linger in one place very long. That makes them incapable of igniting a structure beyond 100 feet. If we look at all the destruction during wildfires, the principle igniters directly on the house and the immediate surroundings are firebrands, which means that the wildfire may be half a mile away, and we still have neighborhoods burning down. The most recent one with high destruction was the Waldo Canyon Fire in Colorado Springs, where 300-plus houses burned. Most of them were in suburban neighborhoods, not surrounded by trees. And nothing else was burning other than the houses. And that's really common. Which means if we don't take home ignition into account, we're not going to solve anything.

HCN So how do we tackle the home ignition problem?

JC While our attention is on the great big flames and the towering convection columns of a wildfire, we've got firebrands igniting pine needles in the rain gutters, we've got a woodpile on the deck, we've got dead grass or bark mulch right up next to the wood wall. When I go into one of these locations, I find that the wildfire has ceased its extreme activity, hours and hours before houses are actually becoming heavily involved. They've ignited from firebrands and they just sit there with small ignitions, slowly involving enough of the structure to where it can go to flaming combustion.

So, if they're all small, slow ignitions, how is it that our firefighters that can't deal with this? Well, if you have a wildfire displaying extreme behavior, both in its intensity and its growth rate, it potentially can be large enough when it gets close to a subdivision to expose thousands of houses simultaneously. Then we've got a hundred engines that are totally overwhelmed. Which means if we have houses that are highly ignition-resistant, the responding resources can become greatly more effective. Suddenly they don't get overwhelmed, particularly given a different approach to response, and we can begin to tackle the smaller ignitions that do take time to develop.

HCN You mentioned a different approach to response. What does that mean?

JC This problem falls in the no-man's land between structure-fire tactics and wildland fire tactics, so they're both ineffective. An inundation approach, which works with structure fires, with lots of water squirting capability, that doesn't help with small ignitions. As soon as crews start inundating houses, they run out of water. Instead, we need to distribute a small amount of water in many different directions. So rather than having a big Type-One engine that can squirt 1,000 gallons a minute, we have a homeowner with a bucket and a mop and some water.

HCN So, you're saying that homeowners need to play a role in the way we mitigate the risk from fires in WUI?

JC Wildland fires are inevitable. And without homeowner engagement, without their participation in mitigating the problem, firefighters can't be effective. It's continuing a problem to have my own agency, federal agencies in general, and most fire departments in this country that deal with wildland fire issues, not be telling people that by and large, under the conditions that destroy lots of houses, we can't deal with this without your participation. It's about taking responsibility for the condition of your house, before the fire, because nobody else can. And it's not just the material that the house is made of, it's the condition that lends itself to potential ignition. It's a big maintenance issue too.

Really, we need to be educating everybody who lives in (the WUI), or near it, or deals with it. Like Southern California, like Colorado Springs, like Denver. Everyone needs to be aware of how this problem works. Additionally, we're dealing with fire agencies that are very paternalistic and patriarchal. So it doesn't come naturally to involve homeowners. On the other hand, homeowners are expecting to be saved. As a society that has largely gone urbanized, we're more

remote from dealing with fire on a personal basis - fewer people smoke, so people aren't even used to a book of matches catching on fire now.

HCN Can you give examples of how homeowners might make their homes less prone to igniting?

JC You don't have to eliminate fire from your property completely, but you have to keep flames from contacting your structure and you have to keep firebrands from having high ignition potential when they land on your house - because they will. Which means all of the fine fuels need to be gone from on and immediately around your house before fire season even starts. All flammable things need to be swept away from your house at least about five feet. The grass needs to be mowed immediately around the structure, but you don't have to mow an acre.

You don't have to cut all the trees down, you just have to make sure they're not contacting each other, and they're not continuous with the wildland. Make sure fire on the surface can't easily burn up the tree and torch out, because that creates firebrands close to the house. I highly encourage hardwoods around the structure as a shield, they just don't support high-intensity fire, and can become a very, very good radiation barrier.

Absolutely get rid of your flammable wood roof. Make sure firewood is in a sealed crib, or away from the house. Act like the fire department isn't going to show up, because that's the likely scenario.

HCN You say it's a social, perceptual problem. Can you talk a bit about that?

JC Wildfires come from somewhere else onto private property, and now all of a sudden we have this social thing where, oh, it's somebody's fault. It's the Forest Service, it's the BLM, it's the state lands department that's the problem. Well, wildfire is inevitable, and fire is a natural ecological factor. So, how come the message isn't that? This is like tidal surge from a hurricane, volcanoes, earthquakes, severe storms. But we're not doing anything about those. We have this social perception, which has been reinforced by agencies starting shortly after the 1910 fires, that we can control fire, and that's why you're giving us all this money.

Meanwhile, issues are compounded by conflicting mandates on the state and federal level. The states are by and large the last ones to get on board, because they have laws that say they are in charge of protection. They don't have any kind of ecological factors in their plan. It's put it out and protect the resources, whether the resource is houses or the Sula State Forest. On the other hand, it is Forest Service policy that they do *not* protect structures. So when we see federal firefighters on private lands, they're having to step out of their mandate because of a perception issue.

What I find is that people don't have an appreciation for the natural history of their landscape either. Here in the Missoula valley, people were lighting fires, there were lightning fires, probably every year. I don't think people understand that fire is absolutely an ecological factor that needs to be accepted. So let's celebrate the natural occurrence and be compatible with that. Because control isn't working for us in so many ways, it's just screwing things up, giving us the

false impression that somehow or other we don't need to be inconvenienced by this factor of the planet that we live on.

Melissa Mylchreest is a contributor to High Country News.

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