California’s ambitious plan to stop deadly wildfires may not be enough, experts say

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Chad Hanson conducts conifer regeneration surveys in July in the aftermath of the 2013 Rim Fire in Stanislaus County.
Photo: Rachel Fazio 2018

As California fire officials roll out an ambitious plan to thin the state’s overgrown forests in an attempt to prevent another year of deadly wildfires, a growing body of research suggests their success may be limited.

The foremost strategy, proposed in a 28-page report to the governor last week, is to clear
trees and brush near vulnerable communities. Thirty-five areas, including about a half dozen in the Bay Area, are targeted in the safety blitz.

But while fewer trees can mean less fuel for fires, researchers have found that it can also mean undermining a forest’s natural defenses and increase the fire risk. For example, thinning can let in sunlight that dries out the woodlands or create space for new, less fire-resistant vegetation to emerge.

Even in cases where forest thinning could slow the spread of a fire, knowing where to do the work — that is, predicting where it will intercept a blaze — is next to impossible, researchers say. If, by chance, flames do burn into a treated area, it takes one ember to blow over the project and ignite another area. Some of California’s recent fires threw sparks a mile or more.

“It’s not fair to say that fuel treatments won’t do any good,” said Max Moritiz, a UC Cooperative Extension wildfire specialist at UC Santa Barbara. “It may provide some protection in some places. But most of us studying this agree that you can’t just do this and (expect to) make much headway.”

The plan by the California Department of Forestry and Fire Protection, or Cal Fire, comes at the request of Gov. Gavin Newsom. On his second day in office, Newsom asked the agency to develop a proposal to address the increasingly destructive fire seasons that have rattled the state and are expected to worsen with climate change.

The Cal Fire proposal lays out a suite of actions to lessen the risk of damaging fires. It includes possibly hiring more firefighters, increasing public education and working with local governments on hazard planning. But the most immediate is the fuel-reduction work at the 35 sites. The projects, many of which are already under way, span 94,000 acres of forest through such areas as Woodside, Los Gatos, Orinda, Santa Cruz County and Big Sur.

Cal Fire spokesman Scott McLean acknowledges that the thinning won’t necessarily stop the type of mega-fires seen in recent years, but he says it can help.

“It gives the folks in those areas time to evacuate and it also give the firefighters a chance to
get in there and mitigate the fire,” he said.

One concern of fire researchers is that Cal Fire will clear too many trees as part of the effort, noting that “fuel reduction” has often been code for logging. Not only is harvesting trees potentially damaging to the environment but it does little to temper a fire.

Recent studies show that areas of forest with large trees tend to burn more slowly and less hot than areas that are broadly cleared. A study published last year by Harold Zald, an assistant professor of forest mensuration and biometrics at Humboldt State University, looked at burn patterns on the California-Oregon border and found that logging sites experienced some of the highest fire intensity.

“Having bigger trees and a more complex fuel structure, associated with a natural regenerating forest, will have lower fire severity,” Zald said.

The shade provided by a mature forest and the lack of younger, more flammable vegetation are among the reasons that older trees offer better defense.

Cal Fire officials say they don’t intend to do any clear-cutting on their projects and plan to tailor their actions to maximize fire protection at each site.

Surgical thinning of the forest, when trees and brush are properly cut back, can help reduce fire severity, most researchers agree.

“You can make things worse ... but you can also make things better,” said Scott Stephens, a professor of fire science at UC Berkeley. “When forested landscapes are in better condition, you don’t have the extreme spread rates and ember rates.”

Stephens, like many researchers, acknowledges that such precision forestry is not easy to do. Putting work crews in the woods with chain saws, bulldozers and wood chippers is costly and time-consuming, and there’s opportunity for error. For example, if trimmings are left on the ground after the work is done, fire risk goes up.

Choosing where to do the thinning is also difficult, given the 15 million acres of California
forest that the state says is at risk of burning. The chance of a wildfire running into a fuel-reduction project before the vegetation grows back is just 1 percent, according to an estimate provided by Dominick DellaSala at the Geos Institute in Ashland, Ore.

Many researchers say the most thorough and cost-effective ways to reduce fuel is to light preemptive fires or let natural fires burn. Controlled burning can clear the most combustible vegetation and cover large swaths of land.

The absence of fire in California is the main reason that forests have become so overgrown. Decades of fire suppression by the state and federal governments has saved lives and homes, but has resulted in a dangerous buildup of fuels.

“On a big scale, we can’t mechanically thin our way out of the problem,” said Zald at Humboldt State. “The only way that we can remove fuels on such a large scale and such large amounts is working with fire.”

The Cal Fire report recommends some immediate prescribed burning but mostly calls for incorporating controlled fires over time. Cal Fire officials acknowledge that burning can be tough to do because of public concerns about smoke and the potential for flames to go awry.

Also, most of the land that Cal Fire oversees is privately owned, which makes it that much harder to conduct burns or let natural blazes run their course.

In the meantime, many researchers say the most effective approach to fire protection is not in the forests, but in communities. They recommend making homes more resistant to fire with hardier construction materials, and clearing the vegetation around them.

“You have to address the home vulnerabilities themselves,” said Moritz at UC Santa Barbara. “If you don’t, you’re just not going to make a lot of progress on fire.”

The Cal Fire plan suggests looking into options for retrofitting buildings and ensuring sufficient defensible space, but Moritz says these activities should be prioritized.
A 2014 study of fires in San Diego County found that homes with 50 feet of clearance around them were the most likely to have survived. Vegetation work more than 100 feet away, the study said, provided virtually no additional protection.

Chad Hanson, an ecologist with the nonprofit John Muir Project in Southern California, said almost all of Cal Fire's planned fuel-reduction projects are simply too far from homes to make a difference.

The longtime critic of state and federal forest policy called the effort a waste of time and money.

“The vast majority of what they’re proposing is not going to do anything to stop fires from reaching communities and protecting homes and lives,” Hanson said. “Fires will burn right through, sometimes slower, sometimes faster. But they’ll burn right through.”

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