

California must burn more of its forests to save them. Is the public ready?

By J.D. Morris

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Bill Tripp was 4 years old when he began studying the benefits of fire, an education steeped in ancestral traditions many generations older than modern-day California.

After Tripp tried to build a fire in the wood stove of his family home one day to keep his great-grandmother warm, she scolded him. Flames were not something to mess around with, she said.

Then she led him toward some oak trees outside her home in a remote Karuk Tribe village near the border of Siskiyou and Humboldt counties. There, she told him to burn a small line in the leaf-strewn ground, a task at which, after some struggle, he succeeded.

Her goal was to show Tripp that fire didn't have to be a volatile, unrestrained force wreaking damage. It could be controlled in the same way that his Karuk ancestors had done long before colonists arrived in Northern California.

"She told me that if I was going to be playing with fire, then I'm going to have to do something good with it," Tripp recalled. "While she disciplined me, she also enabled me to use it as a tool."

Now, more than four decades later, Tripp has devoted much of his career to using the tool his great-grandmother showed him. And government leaders and forest managers across California are taking a similar approach, recognizing after decades of resistance that, in order to save homes and landscapes in an increasingly tinderbox-like state, they must fight fire with fire.

The stakes could not be higher: More than one-tenth of California's forestland — close to 4.2 million acres — has burned this year, more than any other on record. Millions of Californians choked on smoky skies for weeks. Climate change is fueling ever worse conditions for disastrous fires, and the threat is expected to escalate further as temperatures keep rising.

To Tripp and other Native Americans, the concept of "good fire" is not new. Before colonization, tribes would routinely burn the land, a culturally important practice that kept forests healthy and reduced the likelihood of larger, more intense blazes later.

For years, however, tribes and other proponents of prescribed burns have been unable to light the controlled fires on anywhere close to the scale needed to keep the state's parched land healthy. Even as research touted the benefits of prescribed fire more than a half-century ago, the practice was long held back by misguided forest management policies, a legacy of injustice toward Native Americans and a more nebulous, deep-seated cultural resistance to flames and smoke.

Finally, the tide is turning — slowly. California took a huge step forward this year when it reached a landmark deal with the federal government to reduce fire risk on 1 million acres of forest and wildlands annually, including through prescribed fire.

California has about 33 million acres of forest land, most of which is controlled by the federal government. Experts believe the 1-million-acre annual target could, in time, go a long way toward making the forests and wooded areas more resistant to ruinous infernos, if the work is sustained.

It's a daunting task. Figures provided to The Chronicle by the Forest Service and Cal Fire indicate that, in order to meet the 1-million-acre goal, the agencies will need to increase their fire-risk reduction work, which includes efforts to manually thin overgrown forests as well as prescribed burning, by hundreds of thousands of acres per year. While the federal government controls huge swathes of forestland, Cal Fire typically handles prescribed fire by contracting with private landowners through its vegetation management program.

It will take years of arduous effort to reach the new goal, but officials across the board acknowledge that part of their efforts must include intentionally igniting more blazes. And climate change is making the equation still more complicated, as fire seasons have tended to drag on longer than they would in past decades. Prescribed burns need to be conducted when vegetation isn't too wet or dry.

“In the past, we’ve done smaller-type burns,” said John Exline, director of ecosystem management for the U.S. Forest Service’s Pacific Southwest Region. “We really need to look at larger, landscape-type burning — really start looking at thousands of acres at a time, not hundreds of acres at a time.”

In Tripp’s eyes, it’s a long-overdue course correction.

“People have been trying to say this is a mistake for a long time,” he said of past government aversion to prescribed fire. “We’re just now getting to the point where people are tired of seeing the devastation, so they’re ready to push a political discussion that starts to move us back in the direction that we really should have been going all along.”

California officials were warned long ago that they lagged behind other states on using prescribed fire — and that the shortcoming could make wildfires worse.

In 1958, then-UC Berkeley professor Harold Biswell wrote an article in the *Journal of Range Management* in which he compared the use of prescribed fire in California and Georgia, based on controlled burns he conducted himself in both states.

He wrote in the article that prescribed fire was used widely in the Southeast but scantily done in California.

If prescribed fires could reduce fire risk, they would “be a highly worthwhile tool in forest-land management in California,” wrote Biswell, who died in the 1990s.

His comments were prescient. But the paper wasn’t received well when it published.

“There was strenuous push back from the land management agencies,” said Scott Stephens, a current UC Berkeley fire science professor. “Just terrible. Biswell was thought of at the time as really a zealot.”

Today the federal Forest Service and Cal Fire see prescribed fire as an essential tool. But there are also deeply entrenched obstacles.

One is liability. California does not currently absolve those who conduct controlled burns from legal responsibility if the fire they’re igniting gets out of control, according to Crystal Kolden, an assistant fire science professor at UC Merced. The situation is far different in Florida, where people involved are legally protected if the blaze escapes its prescribed boundaries, as long as everyone followed the rules and has proper credentials, Kolden said.

California lawmakers are considering changes to lower such barriers.

California had a major prescribed fire get out of hand in 1999, one year before an even worse one happened in New Mexico, Kolden said. Those helped make intentionally-lit fires less popular.

“There’s very little incentive for (California) fire managers to do prescribed fire and a lot of risk — and for them, much of it is a personal risk,” Kolden said.

For more than a century, the government’s focus on suppressing any and all California fires factored into its reluctance to embrace prescribed fire. But colonization also played a role historically: Spanish settlers suppressed intentional burning shortly after they came to California. Kolden said that “less whitewashed accounts of what happened” show that such policies were used “as a means to steal land and enslave and oppress indigenous peoples.”

“It’s all tied up in that very racist power structure,” she said.

Today, government bureaucracy has factored into prescribed fire frustrations felt by Tripp, the Karuk Tribe member.

As the director of natural resources and environmental policy for the tribe’s natural resources division, Tripp is among the foremost advocates of cultural burning in his tribe’s ancestral lands, which stretch into the vast Six Rivers National Forest along California’s North Coast south of the Oregon border.

Tripp said the tribe has pushed for years to do more burning in the forest, only to be held up by the federal government, which manages the land. One of the more recent issues centered around what he described as the tribe’s inability to set controlled burns without direct, in-the-field oversight from a Forest

Service official. Tripp said the tribe could get as much as five times more work done in a single day without that requirement.

“We’ve been getting barrier after barrier thrown at us for decades,” he said.

A Forest Service official chalked it up largely to a misunderstanding, saying the agency wanted only to require tribal coordination with the government, not a federally-designated supervisor on every tribal burn.

“Ultimately, I’m responsible for what happens with activities that I authorize on national Forest Service land. I’m not comfortable having folks out there working independently of us with us not knowing what’s going on,” said Ted McArthur, Six Rivers’ forest supervisor. “Up until recently, there was some confusion that I was asking for a Forest Service burn boss to be in the field at all times. That’s not what I was asking, but I think that might have been the interpretation of what I was asking.”

The situation has seemingly improved, if only slowly. After sending the Forest Service a letter outlining its concerns, the tribe quickly moved from “barely getting any burning done” to burning as much as 50 acres per day, Tripp said.

The tribe is one of the largest in California, with more than 3,700 enrolled members, but it doesn’t control much land of its own now. That’s why tribal leaders have to work with the Forest Service to burn in Six Rivers, which includes Karuk ancestral land.

One of the most stubborn challenges associated with prescribed fire is perhaps the most subjective: Many Californians don’t like fires in forests, no matter the reason, and they don’t like smoky air.

“Public perception is just challenging,” said Ken Pimlott, who was the director of Cal Fire from 2010 to 2018 and worked on prescribed burning for the agency earlier in his career. “We didn’t have the social license to burn with the smoke. I personally was more than once threatened with lawsuits when I was putting prescribed burns together and doing community meetings.”

State budget cuts also curtailed Cal Fire’s prescribed burning efforts in years past, Pimlott said. But the dynamics began to shift as California wildfires grew worse over the past decade. Pimlott recalled one “pivotal day” about four or five years ago when members of the Karuk Tribe lobbied him directly, saying that a small cultural burn they planned was being held up needlessly by officials citing fire risk at the other end of the state.

Pimlott realized that “we had to make a change,” he said. Even then, though, he knew it wouldn’t be easy.

“It was like turning a battleship,” he said.

Public support for controlled burns to stave off runaway catastrophes later appears to have grown considerably as infernos have encroached into more and more communities. In Sonoma County, which has seen some of the worst and most damaging fires in recent recent years, some residents in the Dry Creek Valley vineyard region near Healdsburg have eagerly turned to prescribed fire to protect their property.

“If we can responsibly burn brush in a way that would prevent us from having to lose our properties, that’s a game changer for the whole community to feel like they can have some control again,” said Helena Hambrecht, one of the residents involved in a controlled burn in November.

Dave Winnacker, the chief of the Moraga-Orinda Fire Protection District, credited his time battling the October 2017 Tubbs Fire in Santa Rosa with transforming his views on how to protect his own community.

“It was absolutely a formative career experience for me, seeing fire move with that speed through urban neighborhoods,” he said. “It reshaped my understanding of the threat in our suburban communities. This big, angry snoring animal marched down the hill and started wiping houses off its foundations.”

Winnacker has since readily turned to prescribed burns as way of hopefully preventing Moraga from following Santa Rosa’s footsteps.

But whether those defensive measures will be sufficient in the age of climate change and wind-driven firestorms that mow down neighborhoods overnight remains an open question.

Tripp, the Karuk Tribe official, knows that forest managers are “nowhere close” to adequately restoring prescribed fire in his corner of California’s deep north.

“We really need to get serious about systemic change,” he said.

Still, Tripp sees positive signs in the direction he sees coming from California government officials as of late. He also sees hope in some of the climate-friendly policies being advocated by the incoming presidential administration, which is poised to include the first Native American to run a Cabinet agency.

Only time will tell if any of that is enough.

Inundated with smoke: Central Valley air quality was uniquely bad this wildfire season

By Monica Vaughan

Fresno Bee, Sunday, Dec. 27, 2020

Wildfires in California, Oregon and Washington in September burned with such intensity that plumes of smoke billowed across the country, over the Atlantic Ocean and into the atmosphere above Europe, more than 5,000 miles away.

Closer to the flames, downwind communities were inundated with smoke and ash from burning trees and buildings. Smoke from several fires blew into the wide San Joaquin Valley, and a thick haze pooled on the Valley floor for weeks.

Even in a good year, cities in the Valley often have the worst air pollution in the nation, contributing to high rates of asthma, Chronic Obstructive Pulmonary Disease or heart disease. Pollution often sits stagnant on the Valley floor that’s surrounded on three sides by mountains.

This year, during California’s worst wildfire season on record, there were days — even weeks — of some of the highest levels of air pollution ever measured locally, reaching unhealthy and even hazardous levels.

Inhaling wildfire smoke has been compared to smoking cigarettes. It’s especially dangerous for children and older adults.

For nearly two months, the air carried fine particles that can trigger asthma attacks, cause permanent lung damage or even death. Residents were told to avoid prolonged outdoor activities. It was dangerous for children to be outside. A quick escape wasn’t available; On 10 different days, the air was unhealthy everywhere in the Valley.

It was a public health emergency (on top of the COVID-19 pandemic), and predictive models suggest it will happen again.

A record year for California wildfires, air pollution

The health risk comes from microscopic particles known as PM 2.5 that are 30 times smaller than the width of a human hair. At this size, PM 2.5 can travel through the respiratory system’s natural defense barriers and into the heart, lungs and bloodstream.

The federal health standard for PM 2.5 is 35 ug/m³ (micrograms per cubic meter of air) averaged over a 24-hour period. During the Creek Fire, the 24-hour average reached almost 200 micrograms in Clovis, Fresno and Madera.

That’s five to six times the federal limit.

In some hours on the worst days, the concentrations of PM 2.5 reached hazardous levels. Sept. 14 was particularly bad; levels of PM 2.5 were over 300 ug/m³ in Madera and Clovis.

“It’s pretty telling of just how bad these high concentrations were,” said Jon Klassen, director of air quality science and planning with the San Joaquin Valley Air Pollution Control District.

“We’ve seen levels like that before (during past fires.) But what was unique this time, was we saw levels like that across the entire San Joaquin Valley. The entire Valley was inundated with smoke,” he said.

A growing body of research links exposure to wildfire smoke with increased hospitalizations and death from respiratory failure, including increased asthma diagnosis. Local hospital records aren't yet available for that time period.

A study of Medi-Cal records during the San Diego 2007 wildfires found increased emergency room visits and hospital admissions for infant and young children. Of particular note, was a 243% increase in asthma diagnoses for infants in the days during and following the wildfire.

The Valley, at times during this wildfire season, seemed surrounded by fire.

An estimated 4.2 million acres burned during the 2020 wildfire season, breaking the previous record in 2018 of 2 million acres. It wasn't just the scale of a few fires that caused problems, but the number of intense fires.

"The wildfire season in 2020 broke a lot of records in California," Klassen said.

Six out of 20 of the largest fires in California history were in 2020.

Shifting winds rarely brought clarity, only smoke from a different fire. Smoke from the August Complex Fire and SCU Lightning Complex Fire was pushed south by northern winds, while eastern winds brought smoke from the nearby Creek Fire — all blew through the Central Valley.

Air quality violated federal health standards in at least one San Joaquin Valley town nearly every day between mid-August and mid-October, according to data from the California Air Resources Board.

Local air pollution regularly nears the federal limit during winter, when exhaust from cars and trucks, dust from agriculture fields and emissions for polluting industries is trapped on the valley floor by geology, topography and weather patterns.

Still, smoke from the 2020 fires dwarfed those pollution levels.

More fires, more asthma in coming years

Breathing wildfire smoke can be dangerous for anyone, but there are ways for people to protect themselves by avoiding outdoor activity or wearing N-95 masks when the air is bad.

That was a difficult ask for people who were already spending more time at home because of the coronavirus pandemic. During bad air days, people still went running or took their kids to the park.

The San Joaquin Valley Air Pollution Control District is the public health agency tasked with alerting residents of the risks. The agency did see an increase in number of subscribers to its air quality alert system during the wildfires.

During the wildfire season, the agency said they issued press releases, gave media interviews about changing air quality levels, worked with the National Weather Service to get air quality alerts and held live press conferences.

Chief communications officer for Valley Air Jaime Holt said staff are working to think of new or better ways to communicate the risks to the public.

This year the team did more Spanish language outreach and increased social media presence to include Nextdoor in response to public feedback, Holt said.

The need to communicate the risk will likely grow in coming years, as prolonged droughts caused by climate change are expected to increase the risk of wildfires in California.

That's explained in a recent report by Union of Concerned Scientists about climate change impacts in the San Joaquin Valley.

"The warming of the Earth reduces the moisture in the soil, increases evapotranspiration (water used by plants and evaporated from rivers and lakes), and speeds up the melting of snow and ice. Scientists also expect that the rainy season will become shorter."

“These changes facilitate the conditions for droughts and will increase their severity and frequency. Increasingly dry forests, grassland, shrubs, and other vegetation means increased fuel for intense wildfires,” the report says. Because of that, public health officials predict asthma events from smoke exposure will increase in the next few decades, costing millions of dollars in medical costs.

Billions of dollars spent on fighting California wildfires, but little on prevention

By Bettina Boxall, Los Angeles Times

Modesto Bee, Sacramento Bee and other papers, Thursday, Dec. 24, 2020

LOS ANGELES — When COVID-19 blew a hole in California’s spending plans last spring, one of the things state budget-cutters took an ax to was wildfire prevention.

A \$100 million pilot project to outfit older homes with fire-resistant materials was dropped. Another \$165 million earmarked for community protection and wildland fuel-reduction fell to less than \$10 million.

A few months later, the August siege of dry lightning turned 2020 into a record-shattering wildfire year. The state’s emergency firefighting costs are expected to hit \$1.3 billion, pushing the California Department of Forestry and Fire Protection’s total spending this fiscal year to more than \$3 billion.

The numbers highlight the enormous chasm between what state and federal agencies spend on firefighting and what they spend on reducing California’s wildfire hazard — a persistent gap that critics say ensures a self-perpetuating cycle of destruction.

This year’s wildfires scorched more than 4 million acres — a modern record — claimed 31 lives and damaged or destroyed more than 10,000 structures, according to Cal Fire. In early September, smoke choked much of the state, obscuring the sun and turning Bay Area skies an ominous orange.

“There was a particular day where my wife said, ‘Maybe we just need to leave California,’” recalled Michael Wara, director of the climate and energy policy program at Stanford University’s Woods Institute for the Environment. “We are fifth-generation Californians. My great-great-great-grandparents are in the ground in Colma. It’s not a place I ever want to leave.

“The system we had for managing this problem doesn’t work anymore,” he lamented. “I think the reality is, just like we need to pay for fire protection, we probably need to be paying something like that much money for fire-risk reduction in the state.”

Climate change is exacerbating California’s wildfire problem. But it didn’t create it. There are a variety of reasons why wildfires have grown larger, more intense and more destructive in recent decades. A big one, experts say, is that 40 million people live in a fire-prone landscape that has been largely deprived of flame for more than a century.

In a widely cited 2007 research paper, University of California, Berkeley scientists estimated that prior to 1800, about 4.5 million acres of California burned every year in fires ignited by lightning and Native Americans.

The elimination of Indigenous burning and the government’s 20th-century fire-suppression policies put an end to that, producing a long-term fire deficit and fuel buildup across much of the state that Californians are now paying the price for.

At the same time, development has continually pushed into wildlands, putting ever more homes and people at risk.

Fire scientists have long called for a dramatic increase in the use of prescribed fire — that is, controlled burns that trained crews deliberately set in forests and grasslands during mild weather conditions.

They have urged federal agencies to thin more overgrown stands of young trees in the mid-elevation Sierra Nevada and let nature do some housekeeping with well-behaved lightning fires in the backcountry.

They point to the dire need to retrofit older homes to guard against the blizzard of embers that set neighborhoods ablaze in the most destructive, wind-driven fires.

Yet year after year, state and federal funding for such work remains a pittance compared to the billions of dollars spent on firefighting.

“When everybody knows what to do and they don’t do it, there’s something deeper going on,” said Wara, who helped draft a recent independent report on the costs of California wildfire that noted the state’s “long history of underinvestment in prevention and mitigation.”

The problem, he says, is largely institutional.

“You developed firefighting institutions that are very powerful, where institutional advancement for people has to do with how well you perform the firefighting mission” — not how well you reduce wildfire hazard,” he argued. “So we have to create something new.”

Wara stressed that he was not suggesting the state cut firefighting funding, but that it spend far more on abating the growing severity of California’s inevitable wildfires — and that it do so through a new state entity apart from Cal Fire.

“There’s been a lack of willingness to say ... we just need to spend money. This is a deferred maintenance issue,” he added.

Wara is not alone. Environmentalists and tribes are calling on the state to ramp up prevention spending. A diverse coalition of groups — including Defenders of Wildlife, the Wine Institute and the California Cattlemen’s Association — recently urged Gov. Gavin Newsom to spend \$1.5 billion next year on what it called wildfire resilience: Wildland fuel reduction, prescribed fire and making rural communities more fire-resistant.

That would be a radical departure from the past decade, when even modest efforts to boost prevention funding have stumbled.

In 2011, the Legislature imposed an annual fee on homes in areas protected by Cal Fire. The assessment, which paid for a variety of department activities, including fire prevention and hazardous fuel reduction, proved so unpopular in rural counties that it was essentially killed six years later.

Lawmakers then turned to the state’s Greenhouse Gas Reduction Fund, funneling \$200 million a year in cap-and-trade auction proceeds to community fire prevention grants and prescribed burning by Cal Fire crews.

Most of that evaporated early this year when the coronavirus-related economic downturn slashed industry demand for the program’s pollution allowances. Budget problems also killed the Newsom administration’s proposal for a November \$4.75 billion climate resilience bond, which included \$750 million for wildfire community protection and forest health.

“We know what is needed to do fire resilience,” said Jessica Morse, deputy secretary of the California Natural Resources Agency, which oversees Cal Fire. “We had laid out a plan ... COVID and our budget crisis undermined those plans.”

Though cap-and-trade auction revenue has rebounded since May, she said “conversations are underway” to find a more stable funding source.

But she dismissed the idea of a new state department devoted to fire-hazard reduction. “I don’t think new bureaucracy is the solution,” Morse said. “We have identified what the solutions are. We need to be able to invest in them consistently at scale.”

She cited an August agreement between the state and the U.S. Forest Service in which they each committed to annually treating 500,000 acres of California forest and rangelands by 2025 with a variety of fuel-reduction practices, including prescribed fire, thinning overgrown woodlands, timber harvest and grazing.

Yet this memorandum of understanding is non-binding and includes neither money nor staffing.

Moreover, the state’s claim that it is already well on its way to meeting its commitment does not withstand close scrutiny.

Of the nearly 400,000 acres the resources agency says were treated in the last fiscal year, work by Cal Fire crews constituted only 55,000 acres — and just half of that was prescribed fire. Community grant projects, such as fuel break construction, represented another 35,000 acres.

The rest, some 300,000 acres, largely consisted of work by private landowners, including 115,000 acres of commercial timber harvest, as well as 114,000 acres of dead-tree removal that may never have been completed.

Landowners can cut down dead, dying and drought-killed trees under a program that exempts them from having to file a costly timber harvesting plan with Cal Fire. They apply to remove the trees on certain acreage.

But there is no requirement that they actually do all the work, nor does the state check to see if they have, said Helge Eng, Cal Fire's deputy director of forestry.

The logging also doesn't necessarily remove the small growth and dead material on the forest floor that helps fuel more intense wildfires.

"Generously, I'd say half of those acres are probably effective fuels reduction," UC Berkeley forestry specialist Bill Stewart said of the roughly 300,000 acres of timberlands the state touted as treated in fiscal year 2019-20.

He also questioned the focus on timberlands, given that much of what has burned in California's big, destructive wildfires isn't forest. It's grassland, oak woodland and shrubland.

The first two landscapes are in need of prescribed fire, not logging. The third is unsuited to fuel reduction. If cleared or burned too often, chaparral — or brush as Cal Fire calls it — turns to invasive grass that ignites readily and feeds fast-moving flames.

Keith Gilless, chair of the state Board of Forestry and Fire Protection, defended the state's treatment numbers. "I don't feel that this is an attempt to claim more progress towards an elusive goal than we are actually making," he said. "I do believe that the activities ... move us in the right direction.

"Are they in aggregate what we should be doing to allow us to reduce fire risk and reintroduce fire on the landscape successfully? No, we are not doing enough acres," Gilless acknowledged. He added that the state is looking for ways to ease barriers to controlled burning, including air quality concerns and liability for escaped fires on private land.

The Forest Service in California also devotes most of its money and effort to firefighting rather than hazard reduction on the nearly 21 million acres of federal wildlands it manages in the state.

In the last fiscal year, the agency conducted controlled burns on just 16,742 of those acres, according to the regional office. Between 2010 and 2017 — the last year for which data was available — it used thinning projects or commercial timber sales to reduce forest fuels on an annual average of 103,000 acres.

Barnie Gyant, who until recently served as deputy regional forester, blamed the low numbers on a familiar litany: A shortage of money and staff to complete projects; public complaints about smoke from controlled burns; and the lack of a commercial market for the small trees that crowd many national forests.

"I'm always hoping there is more money," he said, "but the reality is, that depends on Congress and the other needs that exist in the country for all the other programs."

In September, as fires raged up and down the West Coast, UC Berkeley forest ecologist and climate change scientist Patrick Gonzalez proposed a major shift in federal wildfire policy to break what he called a vicious cycle: Bigger, more intense wildfires boost carbon emissions, which accelerate climate change, which promotes more intense fires.

Washington, he wrote on a science policy website, should redirect federal firefighting funding — which nationally topped \$3 billion in 2018 — to fire-use.

Prescribed burns and managing moderate lightning fires in remote areas are the cheapest and most effective ways to tackle the West's catastrophic fire problem, Gonzalez said.

“Fire is the key, natural ecological process that outdated policies have removed. Only the restoration of natural fire can completely address the root causes of the problem.”