



A stairway is all that's left of a house that burned down from the Palisades fire on PCH in Malibu. (Wally Skali/Los Angeles Times)

CALIFORNIA

Inconvenient truths about the fires burning in Los Angeles from two fire experts

For years, renowned fire experts Jack Cohen and Stephen Pyne have tried to shift the conversation on fire prevention strategies. This week's destruction, they say, could have been minimized.

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Not quite six years ago, wildfire expert Jack Cohen, who lives in Missoula, Mont., visited Pacific Palisades to [instruct firefighters and property owners](#) on how to protect homes against wildfires.

Three days of training, including [a tour of the community](#), left Cohen hopeful, but the feeling faded when it became clear that his lessons were not going to be fully implemented. This week's tragedy has left him with a deep sadness.

From his home outside Phoenix, fire historian Stephen Pyne sees history unfolding in this week's destruction in Los Angeles.

"It may be the fire equivalent of a Category 5 hurricane," said Pyne, a professor emeritus at Arizona State University.

With 11 dead, more than 12,000 structures destroyed or damaged and 150,000 residents under evacuation order, the siege has the potential of being the costliest wildfire disaster in American history, according to UCLA climate scientist Daniel Swain.

Respected by fire agencies across the country, Cohen and Pyne have found their straight-talk admonitions often disregarded or dismissed. Sensitive to losses and suffering, both said they are motivated by the belief that magnitude of destruction this week in Los Angeles and Altadena is not a foregone conclusion.

"I'm compelled to continue pursuing this issue because it is so solvable if we determine to do it," Cohen said.

The two experts [spoke to The Times in 2017](#) when wildfires ravaged Northern California and again this week amid the unfolding calamity. They have long argued that our understanding and relationship to fire has to change if conflagrations are to be prevented.

While Pyne focuses on our cultural relationship with fire, Cohen looks at fire from a scientific perspective. Both suggest that we have more control over fire disasters than we think, and both begin by redefining the problem.

Forget "wildland-urban interface"

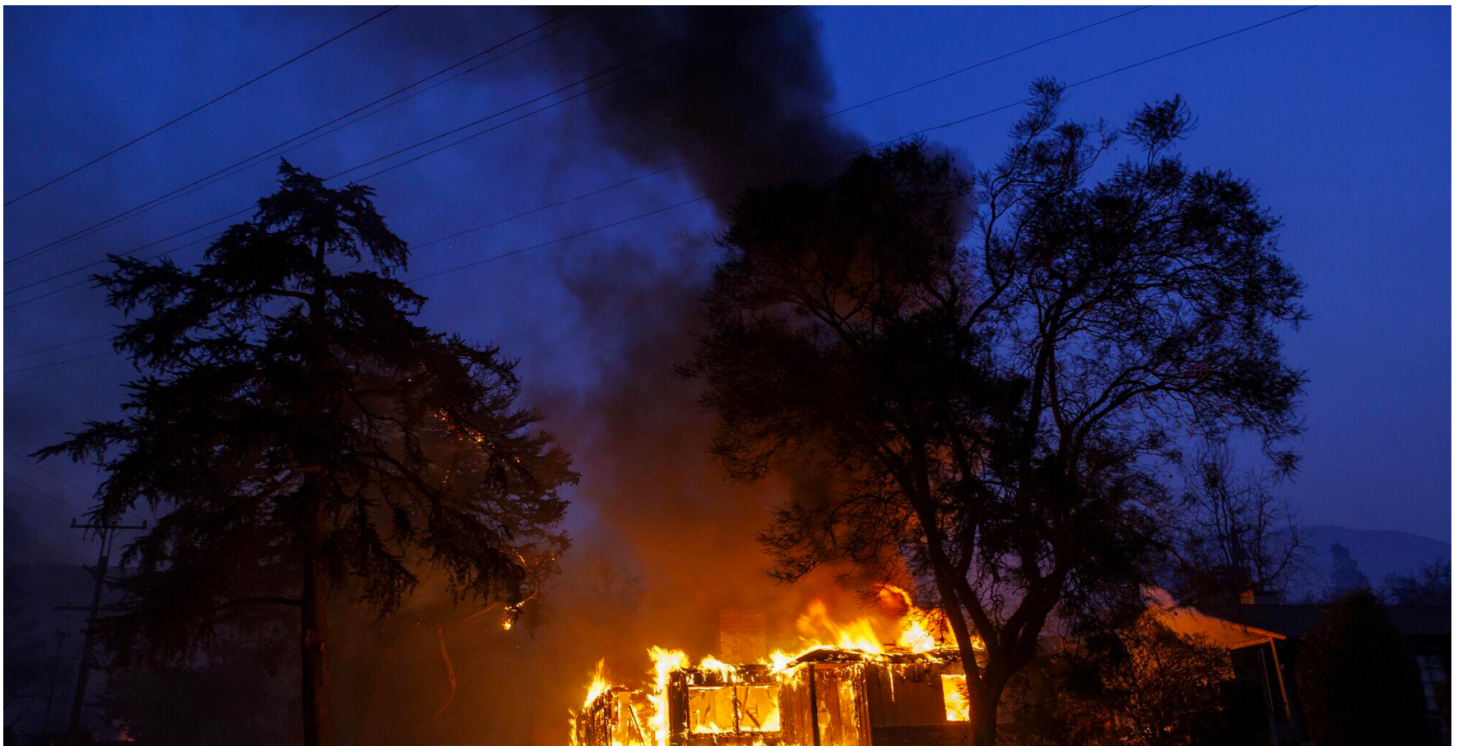
When catastrophic fires occur, experts often blame the so-called wildland-urban interface, the vulnerable region on the perimeter of cities and suburbs where an abundance of vegetation in rugged terrain is susceptible to burning.

Yet the fire disasters that we're seeing today are less wildland fires than urban fires, Cohen said. Shifting this understanding could lead to more effective prevention strategies.

“The assumption is continually made that it's the big flames" that cause widespread community destruction, he said, “and yet the wildfire actually only initiates community ignitions largely with lofted burning embers.”

[Experts attribute widespread devastation](#) to wind-driven embers igniting spot fires two to three miles ahead of the established fire. [Maps of the Eaton fire](#) show seemingly random ignitions across Altadena.

“When you study the destruction in Pacific Palisades and Altadena, note what didn't burn — unconsumed tree canopies adjacent to totally destroyed homes,” he said. “The sequence of destruction is commonly assumed to occur in some kind of organized spreading flame front — a tsunami of super-heated gases — but it doesn't happen that way.





A home is fully engulfed in flames the Eaton fire in Altadena on Wednesday. (Gina Ferazzi/Los Angeles Times)

“In high-density development, scattered burning homes spread to their neighbors and so on. Ignitions downwind and across streets are typically from showers of burning embers from burning structures.”

This fundamental misunderstanding has likewise led to a misunderstanding of prevention. No longer is it a matter of preventing wildfires but instead preventing points of ignition within communities by employing "home-hardening" strategies — proper landscaping, fire-resistant siding — and enjoining neighbors in collective efforts such as brush clearing.

“If we think it's wildfire, then we tend to maintain wildfire as the principal problem — with wildfire control as the solution,” Cohen said. “However, there is no evidence to suggest wildfire control is a reliable approach during the extreme wildfire conditions when community disasters occur.”

Remember Chicago

In the aftermath of the [Great Chicago Fire of 1871](#) — 17,000 structures destroyed and more than 100,000 residents left homeless — city planners and local governments began to focus on fire protection engineering as a way of keeping cities safe.

“The idea was not to catch the arsonist or the mythical cow that kicked over the lantern in Chicago,” Cohen said. “Experts began to consider the role that our buildings played in creating the problem.”

As a result, Pyne said, “cities began to harden themselves against these terrible conflagrations and were successful. Arguably the last major urban fire in the U.S. was San Francisco in the aftermath of the 1906 earthquake.”

Yet those defenses lapsed as the cities grew. Building codes failed to address the requirements of specific environments, and infrastructure was laid out without attending to potential hazard.

Pyne, who has written more than 30 books on the cultural and social effects of wildland and rural fires around the world, argues that many of the most disastrous fires of the last 30 years have been urban fires.

The belief was that urban fires no longer exist, but they've come back. "It's like watching polio return," he said. "It's happening repeatedly."

While the Bel-Air fire in 1961, which destroyed 484 homes, and the Mandeville Canyon fire in 1978, which destroyed 230 homes, are often cited for the scale of their destruction, the 1991 Tunnel fire in the Oakland and Berkeley Hills marked the start of the modern era of urban fires, destroying 2,843 homes.

More recently, fires devastated [Gatlinburg, Tenn., in 2016](#), the towns of Superior and Louisville in [Colorado in 2021](#) and [Lahaina, Hawaii, two years ago](#).

"It's not just a California quirk," Pyne said. "California, I think, gets there first in exaggerated forms, but this is a national issue. And, in fact, it's becoming an international issue."

Think beyond popular wisdom

Southern California has always been subject to drought and Santa Ana winds, primary factors for today's fires. And while climate change is increasing their frequency and severity, Pyne argues that a society dependent on fossil fuels plays a significant role as well.

"A fossil-fuel society remakes landscapes as well by affecting how humans organize agriculture, urban development, the placement of roads and power lines," he said.

Popular wisdom, Pyne said, holds that “fire is something that happens once in a while. It’s seasonal. It’s nothing we really have to invest in systematically. It’s just an emergency that we need to be prepared for and then respond to.”

“I think we’re beyond that,” he said.

While most everyone is aware of fire, said Pyne, few think of it as a year-round phenomenon. “We need to reorganize our lives to this fact,” he said. “It’s more than just having a go-bag, but instead being aware that this is the world today, and these flare-ups are just part of something much bigger.”

For Cohen, shifting the conversation away from climate change is important because it gives us more control over our fire environment and will ultimately make us less vulnerable to these disasters.

“We don’t have to solve climate change in order to solve our community wildfire risk problem,” he said.

Be realistic

The most uncomfortable truth of the last four days has been how quickly firefighting efforts were overwhelmed and outmatched by the extreme fire conditions, Cohen said. L.A. County Fire Chief Anthony Marrone acknowledged there was simply not [enough manpower for this emergency](#).

But, Cohen said, the problem extends beyond staffing.

“We have fire departments that are continually telling us that they’re going to protect us,” he said, “when they can’t during the extreme wildfire conditions. It’s time to recognize the reality and start asking questions about how it is that we’re failing to prevent this disaster.”

Cohen calls it a sense of entitlement that we will be protected, a feeling that is reinforced by fire protection agencies, even when it’s unrealistic.

The National Fire Prevention Assn., a national nonprofit that provides standards for fire suppression operations, calls for [a minimum of three engines or 15 firefighters for a single-residence fire](#), a number that is impossible to attain when fighting a fire on the scale of the Palisades or Eaton fires.

“We're not recognizing, analyzing, questioning how we're failing,” Cohen said. “We just think we need more airplanes and more helicopters flying 24 hours a day.”

More CL-415 super-scoopers or Firehawk helicopters will not help when water is being dropped into 60 mph wind gusts.

“We don't necessarily need a trillion-dollar program and a fire czar to get control of the fire problem,” Pyne said. “What we need are a thousand things that tweak the environment in favorable ways such that we can prevent these eruptions.”

For example, municipal and fire prevention agencies must give property owners advance — and continual — warnings to clear dead vegetation and to wet dry brush within 10 feet of the house with periodic, prolonged sprinklings.

“We've always had fire as a companion, and it's been our best friend,” Pyne said. And now, because we're not minding that relationship, it's become our worst enemy.”