**A climate tinderbox**

Jane Braxton Little

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Forests around the world evolved with fire, hosting species that came to depend on its cleansing power for renewal and the flushes of nutrients it releases. Indigenous people understood this and learned to live with fire.

Over the last century, however, many forests have been fundamentally altered by a misunderstanding of its essential role in forest resilience. While climate change is indeed the primary driver of the global increase in wildfires, forest management has played its own substantive and mostly negative role in that increase by overemphasizing the importance of fire suppression.

Scientists and policymakers are urging fire-fighting agencies to rethink their use of financial and human resources. Instead of focusing primarily on how many crews can be mustered for fire suppression, the emphasis should shift to planning and prevention. Most countries devote less than 0.2 per cent of their wildfire expenditures to such planning, according to UN researchers.

In the United States, just 40 cents of every dollar spent on managing wildfires goes toward reducing fire risk or helping forest communities like mine recover in ways that could make them more resilient.

“There isn’t the right attention to fire from governments,” says Glynis Humphrey, a fire expert at the University of Cape Town and one of those UN researchers.

Whether it’s the collapse of forest ecosystems before our eyes or the trauma of entire towns like Greenville burning up in raging infernos, forest managers are slowly starting to respond to the global crisis – with sadly mixed results.

A wave of deadly fires in Portugal in 2017 that killed 117 people and ravaged 1.3 million acres evoked fierce popular condemnation of the government’s response, prompting that country to adopt an aggressive 20-year plan to transform its fire management. It aims to use fire as a tool, while increasing understanding of its positive role in such a heavily forested country. Prime Minister Antonio Costa has restricted funding aimed at combatting fires to less than 10 per cent of the total spent, while rural communities are to become more involved in protecting their homes and businesses. However, his new plan was barely launched last summer when temperatures of up to 45 degrees Celsius (113 degrees Fahrenheit) and 40-mile-per-hour winds contributed to yet another series of out-of-control wildfires, forcing evacuations of whole communities and a nationwide state of emergency.

Throughout the western United States, a century of public policy committed to suppressing all wildfire has left our forests unnaturally crammed with small-diameter trees and brush. Scientists documented as much as a sevenfold increase in tree density in the Sierra mountains between 1911 and 2011. While large old-growth trees have evolved to live with fires, those small trees and shrubs form an unnatural bed of fuel for future infernos.

As a result, blazes in the West increased by seven large fires a year from the mid-1980s through 2011, according to a study by scientists at the University of Utah and the University of California, Berkeley.

What needs to be done is clear, says Scott Stephens, a professor of fire science at Berkeley. “Active stewardship is the only way we’ll ever get out of this.”

In California, state and federal officials have committed to reducing the threat of catastrophic wildfires by returning fire to the forest ecosystems that evolved with it. They’ve set a goal of igniting planned fires to burn away such brush and seedlings on one million acres annually.

In September 2021, Governor Gavin Newsom signed legislation allocating $1.5 billion to wildfire mitigation projects, the largest such investment in state history. Last January, the federal government also announced a $600 million program to support California’s wildfire recovery efforts. As well-intentioned as such programs may be, however, they have so far fallen well short of their objective. Fire managers hope that, in 2022, they will have set prescribed burns on 200,000 acres, only 20 per cent of the goal. Add in logging to thin overcrowded stands of trees and they may reach 300,000 acres.

Amid the frightening statistics on rising temperatures and scorched acres, an 8,800-acre area in California demonstrates the potential for active management to reduce the dangers of destructive wildfires. In 2019, Forest Service crews set intentional fires on the western slopes of the central Sierra Nevada near Caples Lake. Last summer, when the 222,000-acre Caldor fire roared through there en route to South Lake Tahoe, it left a finger of green where prescribed fires had reduced the forest’s fuels. While that was only a small island of resilience, consider it an enormous example of possibility.

Some of the government agencies most criticized for their management of wildfires are now turning to technology to help detect them before they turn into infernos. In this, they are not alone globally. Take Australia, where fires in the catastrophic 2019-2020 summer season, the worst in that country’s recorded history, killed 34 people directly and another 445 through smoke inhalation. Often sparked by lightning at a time of warmer-than-average temperatures and lower-than-average precipitation, they destroyed about 6,000 buildings and killed an estimated 1.5 billion animals. In response, last year, Australia launched a satellite system connected to ground-based cameras and aerial drones meant to spot any fire within one minute of ignition.

Sonoma County, California, has similarly been testing fire-detecting artificial intelligence technology for two years now. In 2017, that area just north of San Francisco was devastated by the deadly 37,000-acre Tubbs fire. Three other fires followed in 2019 and 2020. In 2021, county officials linked artificial intelligence software to an already existing system of tower-mounted cameras. Called ALERTWildfire, it snaps photographs every 10 seconds, exposing smoke and flames. The AI sifts through the camera images in a fashion designed to increase the speed of detecting such blazes and so getting firefighters to them faster.

After the first full season, the results, however, were anything but overwhelming: AI detections beat humans in spotting fires only once out of every 10 times. Now, managers are directing their AI-adapted cameras to look for fires where humans are unlikely to spot them – as Sam Wallis, a community alert and warning manager, put it: the fires “way out in the middle of nowhere, the ones that really scare us.” He’s also optimistic about AI’s potential for detecting nighttime fires, which can smolder in the forest duff for significant periods before bursting into uncontrollable flames. Overall, Wallis said, “the AI is not a silver bullet, but it is a bullet.”

Last year, Pacific Gas and Electric also began adding AI software similar to the kind Australia is testing to its network of cameras. It’s a better-late-than-never effort to reduce the number of deadly wildfires sparked all too notoriously by its own faulty equipment. The company has, after all, been implicated in at least five major California wildfires including the Dixie one.

Excerpted: ‘Our Inferno: Life in a Climate Tinderbox’.

Courtesy: Commondreams.org