



The Impact of Wildfires On U.S. Cities

By Gail Terry Grimes
for *After the Fire USA*

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Wildfires no longer stay in the wilderness. Cities in almost every U.S. state are increasingly at risk—sometimes directly, always indirectly. Every aspect of community life is impacted: health, the economy, the social fabric, and sometimes life itself.

San Francisco Bay Area residents remember the October day in 1991 when a box-canyon grass fire got out of control in the Oakland hills and spread to within six miles of City Hall. Twenty-five people died. Nearly 3,500 homes and 2,000 cars burned. Losses were estimated at \$3.9 billion in today's dollars.ⁱ

Thirty-plus years after the Oakland fire, the risk to U.S. cities is much worse. Cities have expanded ever deeper into the Wildland Urban Interface (WUI), where homes and businesses encroach on fire-prone forests and grasslands. In the U.S., 46 million residences in 70,000 communities are located in the WUI.ⁱⁱ In the Southwest and Rocky Mountains, virtually every urban area sits inside a large WUI ring.ⁱⁱⁱ

Wildland fuel has long been undermanaged. Days are hotter and dryer, droughts last longer, and then torrential rains lead to thick vegetation that dries in the sun to become fuel. In high winds, the result is the giant conflagration known as a megafire. **We live in the Era of Megafires.**



Smaller cities face by far the greatest risk, because there is usually a wider buffer zone around a large urban center. Consider wildland-adjacent Santa Rosa, California (population 200,000), where megafires have breached the city limits twice since 2017. That year the Tubbs Fire reached almost a mile inside the city, burning schools, strip malls, two hotels, a fire station, numerous businesses (Trader Joe's, McDonald's), three pedestrian bridges, 272 street trees, 500 streetlights, six city parks, and more than 3,000 homes.

Despite a 100-foot fire break around much of the upscale Fountaingrove neighborhood, almost 1,600 houses were lost. In the Coffey Park neighborhood, the Tubbs Fire flattened another 1,300 homes.^{iv} Among the Sonoma County residents left suddenly homeless were an estimated 200 healthcare professionals, the presumptive backbone of Santa Rosa's support system during and after a disaster. The disruption to their lives is emblematic of the long-term impact on any city touched by wildfire.

Redding, California, (population 92,000) is another city with a tale to tell. In July 2018, the Carr Fire jumped the Sacramento River and headed straight into town, forcing 38,000 residents to evacuate. Three people were killed inside their Redding home.^v

Countless other cities have been lucky so far, but their turn may come. Santa Rosa, Redding, and Oakland are canaries in the coal mine.

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As the WUI widens and as climate change worsens, more cities will be vulnerable. Already, one in six Americans is at significant risk. So far, California has seen the worst, but cities across the West and South—in Texas, Florida, Arizona, Oklahoma, New Mexico, Colorado, Utah, the Carolinas—also face an uncertain future. A fire-data analysis by the *Washington Post* finds that by 2052, the U.S. South will see 32 million residents living with high risk, the most of any Americans.



The direct impact on U.S. cities is only the beginning.

Burning buildings and cars send large quantities of carbon dioxide, carbon monoxide, and toxic particulates into the atmosphere, where they can travel to cities thousands of miles away. The smoke seeps indoors through open windows and kitchen fans.^{vi} Particulates from the air also contaminate drinking water.^{vii}

In September 2020, Portland, Oregon, and Seattle, Washington, reported the worst air quality in the world, with San Francisco and Los Angeles close behind. Ash rained down on cities from Oakland to Sacramento and San Diego. Smoke in parts of Oregon, Washington, and California caused public health officials to urge people to stay indoors and avoid activity.^{viii}

Then in 2021, New York, Philadelphia, and Boston all recorded catastrophic loss of air quality due to fires in the West. In New York, the index soared to nine times the recommended exposure to fine particles.^{ix}

Researchers say the particles are up to 10 times more harmful to human health than those from other sources, such as car exhaust.^x The list of harmful effects includes bronchitis, reduced lung function, worsened asthma, heart failure, even premature death. Children, pregnant women, and the elderly are especially vulnerable.^{xi}

- In the first trimester of pregnancy, wildfire smoke may increase the risk of low birth weight, which is linked later in life to hypertension, low IQ, diabetes, and heart disease.^{xii}
- Children breathe more air relative to their size than adults, and their noses may not filter particles as effectively. Children also tend to be more physically active, and they spend more time outdoors, so they may inhale more smoke, more deeply. Air pollution can stunt lung development and worsen respiratory and other conditions later in life.
- For Americans older than 65, the chance of a heart attack or stroke increases after just two or three days of wildfire smoke exposure.^{xiii}

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After just five days of wildfire smoke exposure, the Stanford University Emergency Room reported a fourfold increase in admissions for asthma. (Heart attacks increased the most, by about 40 to 50 percent.) COVID-19's impact on the lungs makes recovery more difficult.

Megafires cause widespread social, emotional, and economic trauma.^{xiv} People who lose loved ones, or whose homes are destroyed, obviously suffer the most, but the distress inevitably ripples outward to communities not directly hit.

After the 2018 Camp Fire destroyed 19,000 homes in the California foothills, the nearest city, which is Chico (population 99,000), was inundated with grieving refugees. Overnight, Chico became the number one housing market in America, as survivors bought up every available property, sometimes at \$100,000 over asking price, often displacing families in rental units the occupants could not afford to leave. This is just one example of the disruption to one sector in one traumatized city. Employment, insurance, education, elder care, transportation, tourism, and all kinds of service access—all have their own ripple effect.

More than 150 miles away from Chico in San Francisco, the sky burned orange for days during the Camp Fire. Across the country in New York and Philadelphia, residents watched uneasily as their own sky darkened with smoke, and children were called indoors.

Little wonder that **wildfire survivors, both near the flames and far away, experience high rates of depression, anxiety, substance abuse, interpersonal violence, and PTSD.** Often, symptoms don't start for a year; then they recur every time the temperature rises. Rolling power blackouts (to prevent fires) exacerbate the sense of uncertainty. The personal and shared impact from a single wildfire can last for decades, no matter the size of the community—and more suffering and instability are on the way in this Era of Megafires.



After the Fire USA is a 501(c)3 non-profit organization created by wildfire survivors and experts to support communities of all sizes as they recover, rebuild their lives, and reimagine a more resilient future with fewer, smaller wildfires. We work with private and government partners to fight fire with expertise, innovation, and respect for each community's uniqueness. We listen, coach, mentor, educate, and open doors. No community should have to start from scratch, especially not now, when fire season lasts all year and when communities across the West and South are calling on us. We cannot help them alone. We need your interest and support.

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