

# STATE OF CHANGE

## PART 7: WILDFIRES

Wildfires are a natural part of the life cycle of Colorado’s forests. They drive the evolution of species and control and diversify the characteristics of the trees in the ecosystem. However, excessive wildfires can permanently change the ecosystem integrity in forests. The last 50 years have brought more and more intense wildfires to the state.

Climate change has contributed to this growing intensity by drying forests and making them more susceptible to fires. Rising temperatures have caused widespread droughts, dried the soils, and reduced snowpack, all of which make forests more vulnerable. Moreover, climate change has driven increased wildfires through a rise in insect outbreaks. Bark beetle epidemics have caused extensive tree mortality across millions of acres of forests in Colorado. There are several bark beetle species native to Colorado that are part of forest life and are considered natural disturbances. They have historically killed dying or weak trees. Rising temperatures has increased the population of these species, causing outbreaks that kill large numbers of trees, including healthy ones. In addition to climate change, historical fire suppression policies have increased the accumulation of vegetation and woody debris on the forest floor, which provide fuel and intensify the fires.

All these factors have created longer wildfire seasons and more intense wildfires that burn large areas. In fact, fire seasons are now **78 days longer** than they were 40 years ago. Between January 2000 and October 2020, Colorado suffered **\$1.8 billion** in statewide property and crop damages, as well as seven deaths and 17 injuries. The 20 largest wildfires in state history all occurred in the last 20 years. More than \$295 million of these damages and **three of the largest wildfires** in Colorado happened in 2020 alone (Cameron peak, 208,663 Acres; East Troublesome, 193,812 Acres; and Pine Gulch, 139,007 Acres).

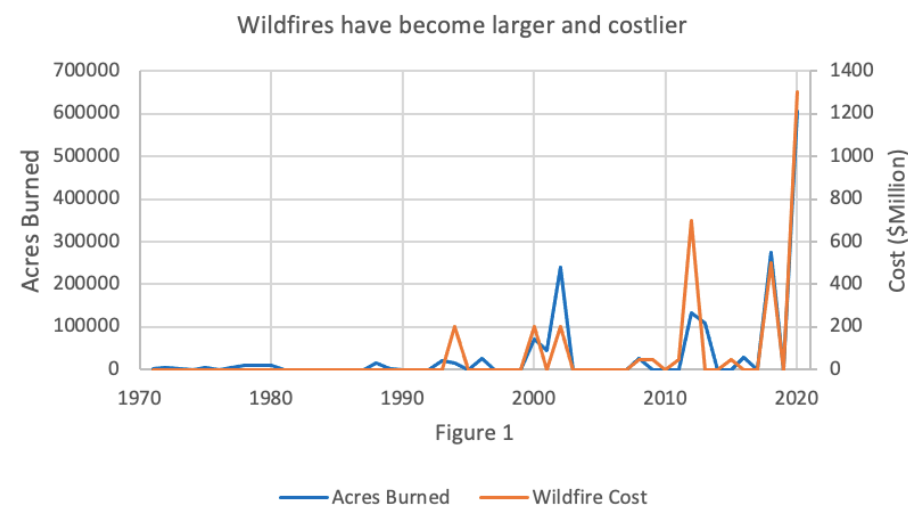
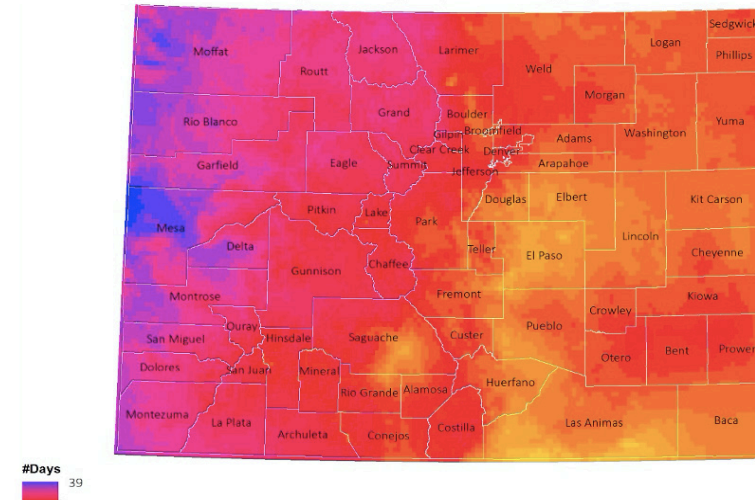


Figure 1

Number of Days With Very High Fire Danger by Mid-Century (High-Emission Scenario)



In Figure 1 (left), the orange line shows the [National Center for Environmental Information](#)’s estimates of the costs of wildfires in Colorado. The true costs, however, are much higher. These estimates do not take into account losses to natural capital or assets, health care-related losses, or values associated with loss of life. Unfortunately, climate change is projected to increase the frequency of such billion-dollar disasters, which expose more people to damages and losses.

Another contributor to larger and more expensive wildfires is rising temperatures. In Colorado, temperatures have warmed by about 2°F in the past 30 years.\* In the past 20 years, the average annual temperature has been higher than the baseline temperature almost every year. All climate model projections indicate future warming in Colorado. The statewide average annual temperatures are projected to warm by +2.5°F to +5°F by 2050 relative to a 1971–2000 baseline, even under a scenario of medium to low emissions.

In Colorado, greenhouse gas [emissions have increased](#) nearly 35 percent from 1990 to 2018. Without drastic action to reduce emissions the warming trend will worsen and climate models project an increase in fire danger in the summer months. Figure 2 (above) shows the [projected average number of days](#) with 100-Hour Fuel Moisture below the 10th Percentile of the baseline (1971-2000).

To avoid an exacerbation of the health, economic, and ecological costs of wildfires, we need to cut our greenhouse gas emissions significantly as soon as possible. And in order to accomplish those goals, we need enforceable, quantifiable policies that guarantee we can achieve them.

**BETWEEN 2000 AND 2020, COLORADO SUFFERED \$1.8 BILLION IN PROPERTY AND CROP DAMAGE DUE TO WILDFIRES**

\* Ray, A. J., Barsugli, J. J., Averyt, K. B., Wolter, K., Hoerling, M., Doesken, N., ... & Webb, R. S. (2008).