

# Wildfire-Impacted Air Quality Considerations for Outdoor Workers

Although the flames from wildfires can wreak havoc, it's the smoke they produce that has the biggest impact on outdoor air quality. In fact, even if a wildfire is hundreds of miles away, the smoke can still affect the quality of the air you breathe.

Wildfire smoke is composed of a mixture of gases and fine particles produced when wood and other organic materials burn. According to the US [Center for Disease Control and Prevention \(CDC\)](#), these include carbon dioxide, water vapor, carbon monoxide, hydrocarbons and organic chemicals. The [California Department of Industrial Relations](#) states that for most people who are not spending time immediately adjacent to the fires, the primary respiratory hazard is the fine particulate matter, PM<sub>2.5</sub>.

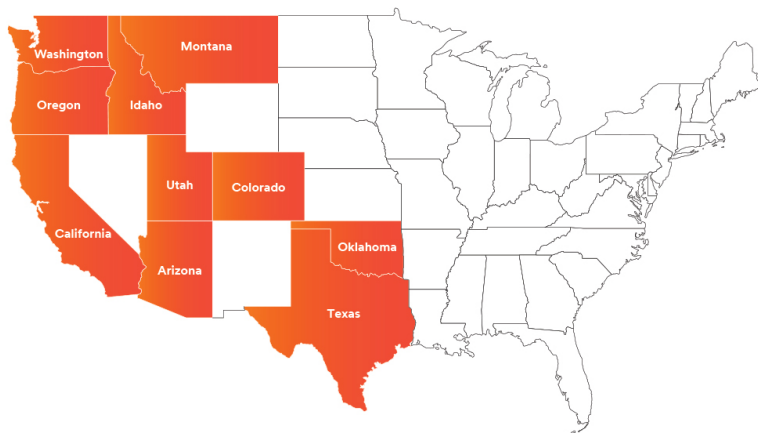
The U.S. AirNow system publishes the [Air Quality Index \(AQI\)](#) in near real time, which assesses the level of five major air pollutants: ground-level ozone, particle pollution, carbon monoxide, sulfur dioxide, and nitrogen dioxide. It's important to note, an AQI of 0-50 is reported as "good," an AQI of 51-100 is reported as "acceptable," but an AQI above 101 exceeds the US Environmental Protection Agency's daily standard and triggers air quality cautioning and alerts.

### What Does This Mean for Employers?

When air quality is poor due to smoke from wildfires, public safety recommendations often direct people living in the affected areas to stay indoors and use room air purifiers. However, that may not be feasible for some workers whose work must be performed outdoors.

To determine what actions to take when outdoor air quality is impacted by wildfires, employers should consult their relevant local and Federal occupational health and safety regulations - such as the Occupational Health and Safety Administration's General Duty Clause, [CFR 29 U.S.C. 654](#), and the [new July 2019 respiratory protection regulations](#) implemented by the State of California. Refer to the [3M™ Respiratory Protection for Wildfire Smoke Inhalation Quick Reference Guide](#) for more information.

Understanding the Air Quality Index (AQI)		
Source: <a href="#">U. S. Environmental Protection Agency</a>		
<b>Good</b>	<b>0 to 50</b>	Air quality is considered satisfactory, and air pollution poses little or no risk.
<b>Moderate</b>	<b>51 to 100</b>	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
<b>Unhealthy for Sensitive Groups</b>	<b>101 to 150</b>	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
<b>Unhealthy</b>	<b>151 to 200</b>	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
<b>Very Unhealthy</b>	<b>201 to 300</b>	Health alert: everyone may experience more serious health effects.
<b>Hazardous</b>	<b>301 to 500</b>	Health warnings of emergency conditions. The entire population is more likely to be affected.



**Top 10 States at High to Extreme Wildfire Risk**

Source: [Insurance Information Institute](#)

### Where in the U.S. do Wildfires Affect Workers?

In the United States, wildfires are most prevalent in the western half of the country, where conditions tend to be more dry.; however, even if a wildfire is hundreds of miles away, the smoke can still impact the quality of the air outdoor workers breathe.

This means that smoke generated by wildfires on the west coast [can travel on air currents all the way to the east coast](#), and that workers a whole continent away from where a fire is burning can be at risk for exposure to particulate hazards generated by that fire.

For more information, please consult the 3M Personal Safety Division's [wildfire resource webpage](#).