

Aspen Daily News

Skies clear — for now — after smoke fills Roaring Fork Valley

Kari Dequine, Aspen Daily News Staff Writer Jul 12, 2026



If you are taking steps to harden your home against the risk of wildfire, you should also harden your health, said Dr. Mark Gladwin, a heart, vascular and lung physician-scientist, dean of the University of Maryland School of Medicine, and pioneer in the field of climate medicine.

Smoke from major wildfires across western Colorado and Utah finally cleared over the past few days, but fire — and smoke — season is far from over in the Roaring Fork Valley.

Wildfire smoke is just one of those adverse health impacts — and one which scientists and doctors are only beginning to understand, especially in regard to its long-term impacts.

Smoke filled valleys across Colorado in late June, leading to low air quality and visibility. While the smoke has cleared out, ongoing concerns about health — and when/if the smoke will return — linger.

The growing body of research and data available at this time all points to one conclusion: inhaling wildfire smoke is bad for you.

And it's not going away any time soon, as the duration, intensity and frequency of wildfires in the West are only expected to increase.

“It's crazy how fast climate change is hitting the West,” Gladwin said. “There are many adverse health impacts directly related to climate change and a growing world population.”

Tiny airborne pollutant particles in wildfire smoke measuring 2.5 microns or less in diameter are “very damaging” to human health, Gladwin said, because of their ability to travel deep into the alveoli, the lungs' tiny air sacs.

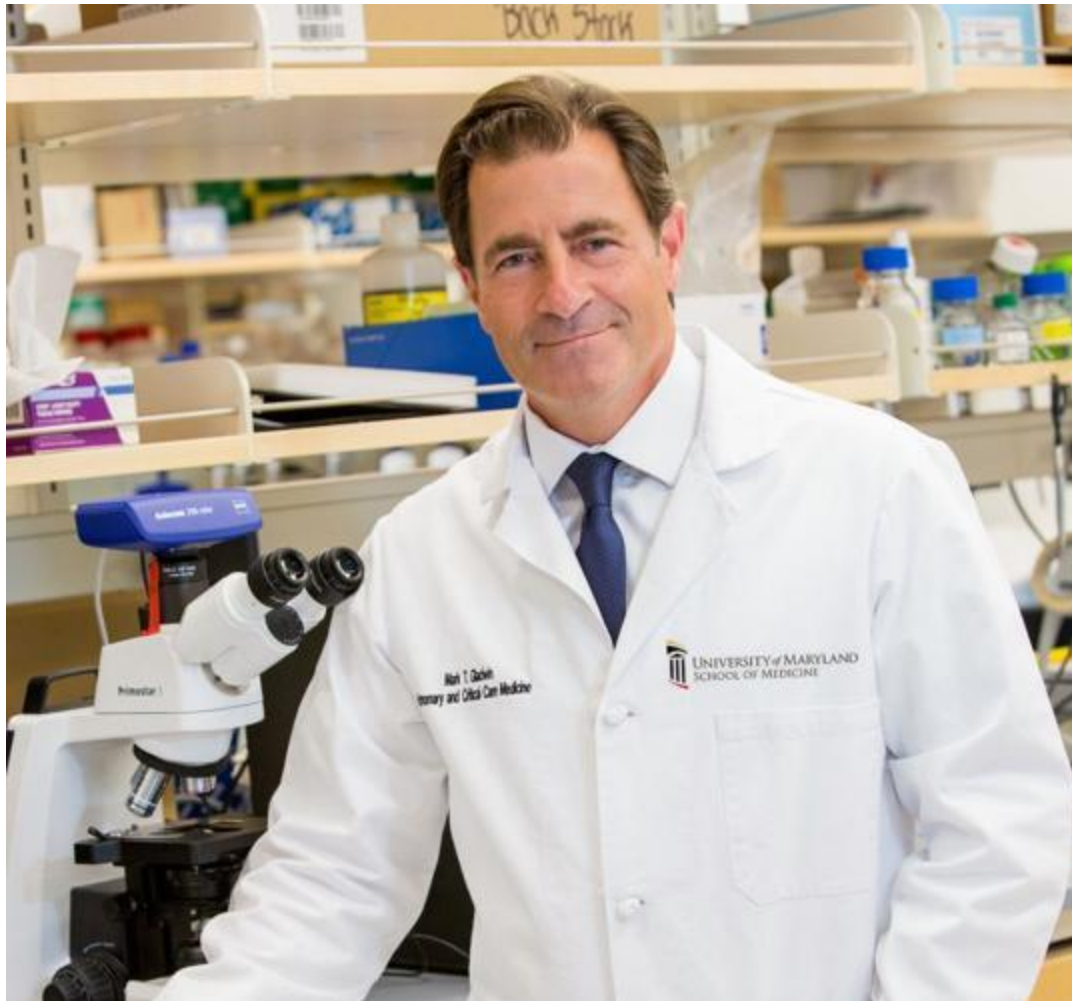
All of our blood flows through the alveoli, he explained, exposing the bloodstream to the pollutants, impacting not just the respiratory but the cardiovascular system.

Those particles can cause inflammation, trigger the immune system, cause scarring of the lungs and bronchial constriction, he said.

Especially concerning, he said, are the volatile organic compounds released in the air as buildings full of plastic products burn. While an N95 mask can capture the PM2.5 particles, there are forms of those volatile organic molecules “that can go right through an N95 mask — and we have no idea what they do.”

Wildfire smoke can also impact the nervous system, with toxins traveling into the brain and impacting cognition.

When Canadian wildfires in 2023 sent massive rivers of smoke to the east coast, Gladwin collected data on air quality in Baltimore and aligned it with emergency room visits and hospitalizations. After just one week of smoke exposure, he saw a significant increase in hospitalizations for cardiovascular and lung-related illness. He said most of those hospitalizations were likely vulnerable people whose underlying conditions were exacerbated by the smoke.



Dr. Mark Gladwin is a heart, vascular and lung physician-scientist and dean of the University of Maryland School of Medicine. He spoke at Aspen Center for Environmental Studies on July 2 on climate medicine — an emerging field of health-related to climate-change impacts.

And that was from smoke traveling from thousands of miles away.

Recent RFV smoke event

From June 24 to July 7, there were nine days on which air quality health advisory alerts were issued for Pitkin County residents, as multiple fires burned to the west, south and east of Aspen.

Over two weeks, haze settled over the Roaring Fork Valley, sometimes thick and brown with a campfire smell and on other days a thin gray layer only visible against the mountains.

The Air Quality Index levels ranged from the “moderate” to “unhealthy for sensitive groups” categories.

Moderate air quality “is not much to write home about,” said Carlyn Porter, Pitkin County Emergency Preparedness and Response program administrator. But it’s worth paying attention to, she said, especially among vulnerable populations.

The groups of people who are most vulnerable to smoke are children, older adults, pregnant women, people with respiratory and cardiovascular conditions and unhoused individuals, she said.

On June 28, the event’s highest AQI value was reached at 130, which occurred between 4 and 5 p.m.

The “unhealthy for sensitive groups” category ranges from an AQI value of 101 to 150. Above 150 is considered “unhealthy,” and above 200 is considered “very unhealthy.”

“About 150 is pretty bad — pretty unhealthy for everyone,” said Hussam Mahmoud, an international authority on wildfire resilience and community-scale risk reduction and director of the Vanderbilt Center for Sustainability, Energy and Climate.

Summer goes on as planned, including at an Aspen Music Festival student performance June 27 in Aspen under several weeks of smoky skies.

More data is coming out about impacts of long-term exposure, he said, including reports of lung cancer related to the 2023 fires in Lahaina, Hawaii.

Like Gladwin, Mahmoud pointed to the toxins released from the contents of burning buildings as the biggest concern and cancer culprit.

There is also a growing body of research on firefighters, he said, showing major health concerns.

While the AQI values in the RFV never reached “unhealthy,” Porter noted the advisories occurred earlier in the season than average, and for more consecutive days than normal.

“We don’t want people to panic,” said Natalie Tsevdos, environmental health administrator for the city of Aspen. “But we do want people to pay attention to alerts.”

How smoke behaves

Mahmoud, who spent some of his career at Colorado State University, works with cutting-edge technology to model how fires move through communities.

He's provided models and analysis for towns in the Roaring Fork Valley, helping to analyze what expected damage could be, and "how to optimize mitigation."

Now he's also working on modeling smoke, which can impact things like evacuation plans.

If visibility is low, cars will evacuate slower, he described. The smoke modeling also helps leaders plan for evacuating people into clearer air.

Mahmoud's models take into account the emissions from ignited fuel, the diffusion of the smoke, how much it moves into neighboring areas and how long it takes to move, and what gets deposited from the smoke onto surfaces.

Hussam Mahmoud, an international authority on wildfire resilience and community-scale risk reduction and director of the Vanderbilt Center for Sustainability, Energy and Climate, works on fire and smoke modeling in the Roaring Fork Valley.

His model can predict what might get contaminated from those deposits, including soil and watersheds.

The fire and smoke models always have uncertainties, Mahmoud said, but the simulations can help emergency response teams prepare for best-case and worst-case scenarios.

During the recent smoke event, National Weather Service forecaster Braeden Winters said fires burning in Utah and southwestern Colorado contributed most of the smoke that settled into the Roaring Fork Valley.

There were four "notable fires pumping out quite a bit of smoke," Winters said, "taking turns which put out the most smoke."

The smoke can also depend on the type and density of fuels burning and how active the fire is at any given time, Winters described.

"If fuels are denser, they are better at combusting and creating more active fire behavior."

Wind speed and direction also play a huge factor in smoke forecasting.

Winters said the NWS “leans” heavily on computer models to forecast smoke because of how complicated it can be to factor in things like fire behavior, shifts in wind, and smoke dispersal patterns.

Wind speeds at different altitudes disperse smoke differently, he noted.

Air quality can often be worse at night, he said, due to cooling down and the temperature inversion trapping smoke near the ground. It can be at its worst around sunrise, Winters said.

“Typically, we see air quality at its best midday and in the early afternoon,” he said.

However, fire activity can change that, he added, given fires typically are less active at night and more active in the afternoon.



A smoky sunset seen from Hunter Creek in Aspen on June 29. Multiple large fires were burning in Colorado to the southwest, west and east of Aspen.

What you can do

The first step to mitigating the negative impacts of wildfire smoke is to monitor air quality, and accept “fires are a normal part of the western landscape — that they are part of living here,” Porter said.

The city of Aspen's website provides a real-time air quality index and Pitkin Alerts send out mass communications when there is an advisory.

There's also the Colorado Smoke Blog, which provides daily statewide updates from the Colorado Department of Public Health and Environment.

Plan your activities accordingly, and be aware that smoke in Aspen may be drastically different in the upper valley than downvalley, and that it can change significantly throughout the day.

Jeffrey R. Pierce, head of the Department of Atmospheric Science at Colorado State University, oversees research on numerous aspects of smoke, including how it affects different populations, such as those of diverse ethnicities and socio-economic status.

And while some people can choose to stay indoors, there are a lot of people who don't have any choice but to work outside, he noted, including doing physically strenuous jobs.

Kids, especially younger children, are vulnerable because lungs don't fully develop until the child is about 8 or 9 years old, Mahmoud said.

In addition, kids respire at higher rates, thus taking in more air when they breathe, Porter said.

When air quality gets bad, Porter said she stays in close communication with childcare centers, summer camps and senior facilities.

Pierce described a process in which smoke loses its smell, and emphasized the importance of checking the AQI even when you can't smell smoke.

An aerial image of Aspen and the smoky haze that shrouded the valley for much of the prior two weeks, taken July 7.

In general, Pierce said that smoke stresses the body out across all systems. And if there are any existing illnesses, especially asthma or other respiratory conditions, those just get exacerbated by the smoke.

Improve your indoor air quality

When air quality does reach unhealthy levels, it is essential to "make sure your home has a clean breathing space," Porter said.

That may mean equipping your air conditioning/air filtering system or portable air filter with a HEPA filter or filter with a high enough MERV rating.

There are numerous options available for portable air filters, including relatively inexpensive models. Just be sure it is the right size for filtering the space.

An air filter can also be made inexpensively with a box fan and air filter.

Porter advises ensuring at least one room stays clean, preferably the room in which you sleep.

And make sure your air system is not pulling smoke in from outside, she said.

Smoke tends to get worse at night, so when there is smoke around, it isn't the time to sleep with your windows open.

Porter also advises stocking up on filters before any potential supply chain issues.

N95s can be effective against the PM2.5s in wildfire smoke, but bandanas and surgical masks are not, Porter said. Masks can make it harder to breathe when it's hot, she noted, so only use them when needed.

Luckily, Aspen's baseline air quality is good, and a significant amount of work has been done to keep it that way.

About 75% of days fall into the "good" category, Tsevdos said, with an AQI between 0-50. In the 1970s and 1980s, "Aspen had an air quality problem."

In the late 1980s, Aspen's air quality was found in "nonattainment," which is determined when a geographic area does not meet EPA standards and violates the Clean Air Act.

That was primarily due to the larger PM10 particles, according to Tsevdos.

"The air pollution would get really bad in the winter."

The sources were primarily found to be wood-burning fireplaces, restaurant grills and dust from dirt roads.

Part of it was the town's mountain valley geography, she added, combined with temperature inversions that can trap pollution close to the ground.

After the nonattainment designation, new standards were set in the early '90s for better venting and filtering on restaurant grill hoods and for wood-burning stoves, which are not allowed in new construction.

There's still some "grandfathered-in" grills and stoves, she said, but not very many.

Vehicle traffic also contributes to pollution, but Tsevdos noted improved national vehicle emission standards as well as year-round local street sweeping that removes particulates from the roads.

Smoke is visible on July 10 looking toward Ridgway and Ouray coming down Dallas Divide. The Gold Mountain and Elk fires are burning in the area.

Outdoor activity

If there are alerts, pay attention to your body, Tsevdos advised.

If your throat is irritated, your eyes are watery or your breathing feels different, consider limiting your time outdoors.

People with asthma or other respiratory issues are at a much higher risk.

Pay attention to things like an increased heart rate, lightheadedness, and fatigue as well.

"Self analyze," advises Tommy Cox, owner of Elite Performance Academy in Carbondale. "Ask yourself, am I feeling out of the norm right now?"

When air levels are unhealthy, Cox advises his clients, "First and foremost, stay indoors."

Cox is also head coach of the Aspen High School boys lacrosse team.

"Do your homework before walking out the door," he advises. Check the forecast and AQI.

If the smoke is heavy, Cox recommends focusing on strength training.

Higher cardio activities like running mean pulling that smoky air deeper into your lungs, he said. "Strength training — anything with slower breathing — won't stress the respiratory system. ... Use this time to lean into things like yoga, mobility and resistance training."

If you do go out, Cox recommends an exit plan — being able to get out of the smoke quickly if wind shifts and air quality suddenly worsens. Think about an exit plan that takes minutes, not hours, he said. "The longer you are out there the more toxins you are putting in."

Stay hydrated and add electrolytes, Cox advised, as smoke dries out eyes and the respiratory system.

The Prineville Hotshots take a break on July 8 as the Ferris Fire, located in southwestern Colorado, makes another push up the canyon.

Courtesy of Madison Reed/Caught the Fire Bug Facebook page

Cox emphasizes that being healthy is about overall health — forgoing a run and sitting on the couch during a smoky day is going to be a much healthier decision than pushing your body to exercise while breathing in toxic air.

And while you are indoors, “make it fun and lean into other things.”

The impact of smoke on mental health

Many people live in the Roaring Fork Valley expressly for the outdoor recreation opportunities. When those are taken away, it has both a physical and mental health impact.

During the recent smoke event, Jarid Rollins, director of behavioral health services for MidValley Family Practice, said, “Smoke is impacting our ability to cope with stress. It is keeping people away from the tools they use to deal with it.”

For people who take a run or go for a bike ride to manage stress, Rollins recommends exercising indoors — as unpleasant as it may feel. He advises taking a group class, or trying a new indoor activity. “Getting out of your comfort zone can be helpful.”

And if the air quality isn’t a high risk, he notes that “walking is one of the easiest ways to access mindfulness skills,” and “get away from the stressors of daily life.”

Walking — reducing stress and mindfulness — “is one of the best ways to regulate the central nervous system,” he said.

Rollins also noted another dynamic of mental health related to more existential questions: whether smoky summers and avoiding the outdoors will increasingly become the norm, and what that means for people’s life experience in the valley.

There are also people, such as those evacuated for the Lake Christine Fire in 2018, for whom smoke can trigger a trauma response.

Pierce said there are studies showing an increase in domestic violence when there is more pollution in the air, including from wildfire smoke.

“Increased smoke in the valley impacts not just our bodies but our mental health,” environmental psychologist Lindsay Branham said. “It is normal to feel overwhelmed, anxious and concerned about the future of this valley.

“Eco-anxiety is a very understandable response to rapid environmental change and loss.”

The fire itself — as devastating as the potential consequences are — can present people with a clearer plan of action, Rollins observed.

There is urgency and obvious, visible danger. Smoke is more insidious, he noted, with more unknowns and acting more like a chronic stressor.

A hazy smoke-tinted sunset through the windshield of a car traveling westbound on Highway 82 on June 27.

The air is clear, for now

With bluebird days back, it can be easy to want to forget those consecutive days of haze.

Rollins recommends being intentional about our gratitude for clear skies rather than just forgetting about the smoke.

Pierce said forecasters are “cautiously hopeful” about what is predicted to be an active monsoon season.

Recent rain and reduced winds helped firefighters gain control of the numerous fires burning in Colorado and neighboring states.

However, no one knows what the rest of the summer and fall will look like in terms of drought, wildfire and smoke. Pitkin County remains in the highest “exceptional drought” designation.

Sunday’s heat could break all-time records for high temperatures in the Roaring Fork Valley.

While there has been a respite from red flag warnings, the wind will return at some point.

Rain is forecast for next week, but with rain comes lightning.

And even if Colorado gets spared more future fire than it is currently enduring, smoke can travel — and travel far.

The large fires still burning are a ways away from full containment.

As of Saturday, the closest fire, the Willow Fire near Leadville, had reached 5,342 acres and was at 22% containment.

The state's largest wildfire, the Aspen Acres Fire near Pueblo, had reached close to 100,000 acres, burned more than 800 structures and was 34% contained.

Regardless of what the rest of this fire season holds for the Roaring Fork Valley, drought, fire and smoke will be only an increasing element of living in the West.

“Climate change is expected to continue to exacerbate impacts to forested ecosystems by increasing the frequency, size and severity of wildfires across the western United States,” according to a 2023 study by Tzeidle Wasserman and Stephanie Mueller and published in Fire Ecology.

So just as you may be clearing vegetation from around your house and covering vents to prevent embers from entering, make sure you have at least one room with adequate air-filtering abilities.

When there is smoke in the air, check the AQI regularly, make sure you have a room with proper filtration, pay attention to how your body acts differently, protect vulnerable people, and find indoor activities you enjoy.

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