

Rough fire can take your breath away

By Mark Grossi

The Fresno Bee, Saturday, August 29, 2015

Forget about natural splendors at Cedar Grove in rugged Kings Canyon National Park. The stifling air last week was more like Beijing in January than a Sierra vacation spot in August.

Temporary air monitors at times showed soot from the Rough fire had turned the air “hazardous” – a federal pollution category only occasionally triggered even in California, home of the nation’s worst air.

This is not like a campfire, which is benign by comparison, health and air quality experts say. It’s a dense plume from a wildfire pouring tons of pollution gases and tiny, lung-searing debris into the air. It’s a good reason to flee, the experts say.

“There’s very good evidence that fine particulate matter increases risk for cardiovascular problems,” says Dr. John Balmes, a University of California at Berkeley professor who studies air pollution’s effect on health. “You see more heart attacks. You see more deaths.”

Cedar Grove, Hume Lake and Wishon were among places authorities evacuated as they fought the Rough fire. The lightning-caused blaze started small on July 31 in steep wilderness, but it had spread to more than 60,000 acres by Friday. Firefighters have not been able to contain it yet. As of Friday, it was the second-largest wildfire burning in California.

There is good news for the San Joaquin Valley. For the most part, smoke has been a no-show here, though there have been notable exceptions in Bakersfield, Tulare and Turlock, air quality leaders say.

The smoke mostly has remained trapped in mountain canyons and other natural low spots, says Jon Klassen, program manager for the San Joaquin Valley Air Pollution Control District.

Klassen takes part in a daily phone discussion of fire conditions with many agencies, such as the U.S. Forest Service, National Park Service, California Air Resources Board and wildlife officials.

“In the San Joaquin Valley, we’ve been lucky that the meteorology has kept the smoke in the mountains,” Klassen says. “But the smoke is going somewhere. On satellite photos from the National Weather Service, you can see it drifting along the Sierra.”

Miles from fire line

The smoke rolled in around 2 a.m. Thursday at Pinehurst, 4,100 feet in elevation and southwest of Kings Canyon National Park, residents say. Thick as fog, the smoke turned the sun orange, says Jack Harper, 59.

“It’s like stepping into a column of smoke coming directly from a campfire,” he says, coughing as he speaks into the telephone.

People in foothill communities sometimes face days with lots of smoke, sometimes not. In some areas of the foothills, the smoke suddenly will descend on one neighborhood but not another. Then it sometimes departs quickly or lingers for hours.

Another Pinehurst resident, Michele Bauer, 66, says she is staying indoors a lot, and keeps her pets inside, too. She says she is healthy, and the smoke has not bothered her as much as others, but life is more difficult.

“The smoke has been pretty bad,” she says. “Overall, I feel pretty lucky, though. We haven’t needed to evacuate.”

Harper says he doesn’t think the fire will come in their direction, though he and wife Donna are ready to pack up and leave town. They try to arrange their schedules so at least one of them can be around the house all day, he says.

Harper works on water wells in the area. He says he was thinking about not even leaving the house on Thursday. He has been suffering from a respiratory virus that does not seem to go away.

In more than 25 years of Pinehurst residency, he says he has never seen smoke like this. His wife has asthma, and she must use an inhaler every four hours. She was headed to Los Angeles for family matters on Thursday.

“It’s sad that she’ll probably get relief from the bad air by going to L.A.,” he says. “But here, it’s like breathing with a weight on your chest.”

Science of smoke misery

Wood smoke is among the most dangerous pollutants regulated by the local air district, says Seyed Sadredin, executive director of the Valley air district. Some chemicals in the fine soot particles are carcinogenic, he says.

Known as PM-2.5, this soot is among many kinds of tiny specks – invisible to the naked eye – linked to heart disease, lung ailments and early mortality.

“You’re not going to suffer these effects from brief exposure to smoke,” he says. “It’s the prolonged exposure you get in your neighborhood during winter when someone is burning wood in a fireplace.”

A wildfire can create the same or worse situation, depending on how concentrated the tiny specks are and how long people are exposed.

Among the most common advice during an intense smoke episode is to remain indoors with windows and doors closed. But Sadredin says the air district does not believe that approach is effective enough.

The soot particles are microscopic – only a small fraction of the width of a human hair. They can still get into the house, slipping through cracks in the door and around the windows, Sadredin says.

“In summer, you can protect yourself from ozone by staying indoors,” he says. “But the best way to protect yourself from PM-2.5 is to leave the area for a while until the smoke clears up.”

There is a lot of research showing the danger of long exposures to PM-2.5 created by fire, says Balmes, the professor at UC Berkeley.

In other parts of the world, burning solid material, such as wood or coal, is a major cause of chronic obstructive pulmonary disease – emphysema and chronic bronchitis – among women who do not smoke, he says. It is caused by cooking over an open fire in a poorly ventilated area.

Balmes adds that the respiratory system isn’t the only affected part of the body. The tiniest particles can pass from the lungs into the bloodstream and create inflammation in the body.

That’s how heart problems are triggered, he says. Hundreds of people die prematurely in the San Joaquin Valley each year because of PM-2.5 particles of all kinds, not just smoke.

Research continues on PM-2.5, especially smoke particles, he says.

“They contribute to many other problems like diabetes and obesity,” Balmes says. “These effects are still being researched, but the body is basically reacting to injury.”