

Heat, drought worsen smog in California, stalling decades of progress

By Tony Barboza

L.A. Times, Monday, Nov 10, 2014

Heat and extreme drought have worsened smog in California over the last year, stalling decades of progress toward cleaner air and increasing health risks.

The state's prolonged dry spells have brought more temperature inversions, with a layer of warmer air trapping cooler air below, concentrating pollution near the ground. Mother Nature could clear away much of the bad air with rain or wind, but high-pressure systems have resulted in fewer storms, less circulation and unusually stagnant conditions.

"There's a steady trend of air quality getting better, but layered on top of that is the meteorology, which is a crazy, up-and-down thing that is very hard to predict," said Anthony Wexler, director of the Air Quality Research Center at UC Davis.

Relief could come as soon as this winter — if enough storms blow in to stir up the air and sweep out pollution.

How pollution gets trapped

Forecasters say a weak El Niño has a 58% chance of developing in the Pacific Ocean this winter and could bring more rain to California, cleansing the air.

"Even absent an El Niño, if we can just get back to a normal winter, air quality will be significantly better," said Seyed Sadredin, who heads the San Joaquin Valley Air Pollution Control District.

Over the winter, the district recorded the worst air pollution in more than a decade. And last week, the valley's fine-particle pollution again jumped to unhealthy levels.

Many Californians have experienced the jump in pollution as more hazy vistas and bad air days. Others have faced noticeable health consequences.

"You see it, and for someone who has breathing problems, you feel it," said Pati Calzada, 27, a college student who lives in the Inland Empire city of Colton, one of the smoggiest areas in the nation.

Both Calzada and her 7-year-old son, Abraham, who was recently diagnosed with asthma, have trouble breathing when pollution levels go up.

"It feels like a weight on my chest, and I know I'm not the only one," she said. Her frustration with polluted air led her to join a Sierra Club campaign to advocate for solar power and other clean energy.

Conditions grew worse, in part, because higher temperatures accelerate the chemical reactions that form ozone, the lung-damaging ingredient in warm-weather smog. In a vicious circle, heat also boosts demand for electricity, increasing smog-forming emissions from power plants.

Hot, dry conditions also have led to increasing numbers of California wildfires, which release more smoke. And dry farmland has been kicking more dust into the air.

When drought caused air pollution to increase across California last winter, conditions were worst in the San Joaquin Valley. Fine particles jumped to their highest concentrations since 2001, more than three times the federal standard of 35 micrograms per cubic meter.

The troubles continued this fall, as the valley and Southern California reported more bad air days from ozone.

Another unusual spell of high temperatures and a strong inversion layer hit the San Joaquin Valley last week, causing fine-particle pollution to build up to dangerous levels. The region's air quality officials are telling residents to stop burning wood and reduce their driving. Activists have called for school sporting events to be canceled to protect children's lungs.

Though air pollution is a year-round problem in California, it peaks in two distinct seasons.

In the summer, ozone is the main pollutant of concern. It is not emitted directly but formed after cars, trucks, power plants and factories release reactive gases and unburned hydrocarbons. Those pollutants cook in heat and sunlight to form ozone, a corrosive gas.

Breathing ozone can harm children's lungs, trigger respiratory problems such as asthma and bronchitis and worsen heart and lung disease. On days with high ozone pollution, hospital visits for asthma rise and the risk of premature deaths increases.

In winter, another type of air pollution called fine particulate matter, or soot, becomes the main problem.

Tiny particles emitted by diesel engines, fires and other combustion sources measure less than 1/30th the width of a human hair. They are of great concern to health experts because they are inhaled deep into the lungs and can impair breathing and damage the heart and blood vessels.

Chronic exposure to fine particles is linked to thousands of premature deaths a year in California, mostly from heart attacks and cardiovascular disease. Most of those fatalities occur in Southern California, where a 2010 economic study found that fine-particle pollution contributes to as many early deaths as traffic accidents.

Pollution regulators have downplayed the recent uptick in smog as a blip in a decades-long trend of improving air quality.

Peak ozone concentrations in Southern California are down to about one-third of what they were in the 1970s and '80s. The region's fine-particle pollution has been cut in half since measurements began in 1999.

Emissions from cars, trucks, ships, power plants and industrial facilities are falling because of local, state and federal regulations that ensure the air will keep getting cleaner in the long term, regulators say.

Still, California is far from meeting air quality standards.

To meet a 2032 deadline to comply with current standards, the South Coast Air Quality Management District will have to slash smog-forming gases, called nitrogen oxides, more than 75%, regulators say.

Reaching that level will require near-zero emissions across much of the economy. And in the long term, rising temperatures from climate change will make controlling smog more difficult, posing new challenges in the district, which includes 16.7 million people in Los Angeles, Orange, Riverside and San Bernardino counties.

The San Joaquin Valley faces similar obstacles. Air quality officials say new rules adopted this year place the valley under the nation's most stringent wood-burning restrictions, virtually banning the use of traditional fireplaces during the winter season to control a major source of lung-damaging soot.

Clovis and Bakersfield, with dirtiest of dirty air, complicate Valley's pollution battle

By Mark Grossi, staff writer

The Fresno Bee, Saturday Nov 8, 2014

A decade ago, corrosive air hung in the San Joaquin Valley for more than 10 weeks from June to mid-August — 73 consecutive days of a breathing nightmare.

That summer, Southern California, supposedly the nation's king of bad air, exceeded the federal ozone standard 115 times. The Valley did it 143 times. From 1999 to 2004, the Valley averaged 153 bad ozone days a year, a lung-scalding run that launched the Valley into a public spotlight nationally.

New rules, big investments in technology and public awareness have made those ozone sieges fade, but air quality still is far from the health standard. The Valley led the nation this year with 97

bad ozone days. And specks of soot, chemicals and other debris are as bad here as they are anywhere in the nation.

It might be time to add a new tactic by focusing a little more on pollution hot spots in this 25,000-square-mile region, says the San Joaquin Valley Air Pollution Control District.

Some ideas: Require electric motors to replace diesel engines on farm water pumps in a hot spot. Raise a little more money from vehicle registration fees in hot spot areas and use the money to help clean up dirty engines and industries.

And maybe shift production times for some industries to avoid afternoon pollution peaks. There might even be consideration of an afternoon ban on some driving in a hot spot on the worst days.

Why? Because the Valley needs to address a tough technicality in the U.S. Clean Air Act: If only one monitor detects an air violation, an entire basin is considered out of compliance with the health standard that day.

Look at Oct. 12 this year. Clovis just slightly exceeded the federal eight-hour ozone standard. No other monitor showed a problem in the 25,000-square-mile Valley from Stockton to Bakersfield. The air was healthy everywhere except Clovis, yet the entire Valley was marked down for an ozone exceedance.

As it turns out, Clovis is the Valley's hot spot for ozone. Bakersfield is the hot spot for particle pollution, known as PM-2.5, according to the district.

"If those places do not attain the standard, the Valley won't attain," district executive director Seyed Sadredin said. "We're not talking about backing off on the pollution reduction in other parts of the Valley. But we're seeing that these two hot spots need more attention."

The idea is in the talking stages as the district embarks on extensive planning to control ozone and PM-2.5. In the next few years, the district will have to complete plans with enough reductions to attain three PM-2.5 standards as well as tighter ozone standards.

The PM-2.5 cleanup deadline will be in five years. The next ozone deadline will be 2024.

Built-in problem

The Valley has always struggled with air cleanup deadlines. The bowl-shape region traps dirty air. Warm, stagnant weather holds it here. It takes far less pollution to exceed a federal health standard here than in many places, including Southern California.

Even with tougher district rules — such as the new wood-burning restrictions — and tighter federal standards on diesel engines, the hot spots will be hard to clean up, district projections show.

To focus on Clovis and Bakersfield, officials will need to deal with regional politics, doubts from air activists and probably state and federal air agencies.

Historically, the politics have involved the Valley's northern tier of counties — San Joaquin, Stanislaus and Merced. Their air is cleaner than counties to the south, but they feel they need to speak up for their share of the \$150 million in federal and state grants the district gets each year.

The money helps replace diesel engines, fireplace inserts, gasoline-powered lawnmowers and pay for many other incentive-based cleanup programs. Thousands of old diesel engines and diesel-powered vehicles have been replaced with this kind of money.

Stanislaus County Supervisor Bill O'Brien, an air district board member, defends the northern counties.

"We can't just take the money from one area and give it another," said O'Brien, whose family owns O'Brien's Market, based in Modesto. "If the hot spot is around Fresno or Bakersfield, then we might want to talk about different rules and different ways of raising money in those areas to spend there."

Too narrow a view?

Air activist Tom Frantz of Shafter in Kern County says he worries that new efforts might be focused too narrowly around one air monitor just to lower the monitor's readings.

He mentioned an urban Bakersfield monitor that might get better readings if nearby restaurants had PM-2.5 filters. But buying filters for those restaurants wouldn't help in other areas, he said.

"A problem a few miles away, caused by diesel trucks and ammonium nitrate, is left untouched," he said.

The Valley's troubled air quality extends to the outdoor paradise of Sequoia National Park, which has sometimes led the region in bad ozone days.

Sequoia's problem is a little different, but it needs to be addressed, Sadredin said. In addition to getting pollution from the Valley, a major culprit in warm weather can be wildfires. The district can't control wildfires, but it can work on Valley sources.

"We have to target the primary sources that contribute to ozone formation at the hot spots," he said. "National parks come with complexities and anomalies that may require other approaches."

Cancel football due to awful air: right or wrong?

By Steven Mayer

Bakersfield Californian, Saturday, November 8, 2014

Dangerously high levels of air pollution descended on Bakersfield this week, prompting an environmental group to call for the cancellation of all school sporting events.

But postponing Friday night football -- even when vigorous outdoor activity is not advised -- may be a tall order in football-crazy towns like Bakersfield and other valley communities.

Dolores Weller, interim director of the Central Valley Air Quality Coalition, put the onus on the San Joaquin Valley Air Pollution Control District for not being more forceful in its advisories this week regarding the unseasonable spike in particulate pollution.

"Based on previous nights this week, air quality will be in the (highest) purple level at about kick-off time, 7 p.m.," Weller said in a news release.

"At those levels, children are normally kept indoors at schools from recess and P.E. Schools have done a pretty good job of monitoring the Valley Air District's monitoring tool online, but what about at after-school sporting activities?"

Weller said school districts don't have the expertise to make that call. But the air district does, and should be more vocal in protecting the health of young athletes.

But Seyed Sadredin, the eight-county air district's executive director, said school districts are well aware of the outdoor activity risk guidelines, and school officials must decide when sporting events are postponed.

"The air district does not have the authority to force school districts to do anything," Sadredin said.

Cancelling sporting events due to bad air is not unprecedented, he said. In 2008, following a series of wildfires, some valley school districts cancelled or postponed games.

Normally this time of year, before the winter inversion layer traps ultra-fine particles at ground level, Bakersfield enjoys a short period of improved air quality.

But that brief respite may have disappeared.

"Because of abnormal weather conditions, we are experiencing unusually high pollution levels that are dangerous to public health," Sadredin said in a news release. "We are asking the public to refrain from burning and to also reduce driving."

According to the air district's guidelines, scheduled sporting events "must be rescheduled or relocated" when ultra-fine particle pollution reaches Level 5, or more than 75 micrograms per cubic meter.

On Friday, the pollution levels soared to 106 at midday and remained at 90 or higher through most of the afternoon, according to readings from a measuring station in metro Bakersfield. At 6 p.m., the level was at 90.

Weller said that while the air district correctly recommended people drive less and avoid using their fireplace, nowhere in the press release, she said, are recommendations for parents and schools regarding sporting activities.

The air district did warn that "fine-particulate pollution is extremely harmful to health and can cause respiratory and lung disease, heart attacks and even stroke."

But Weller thinks more should be done.

"It is ultimately up to the school," she said in an email Friday. "But the air district needs to make recommendations. They already make recommendations, which schools follow during school hours. Why would things be different after hours?"

Air district: Don't burn, please limit driving

Bakersfield Californian, Friday, Nov 7, 2014

The valley air district urged people not to burn and to curtail their driving because of "abnormally high" levels of air pollution here.

The high pollution levels are "dangerous to public health," Seyed Sadredin, executive director of the San Joaquin Valley Air Pollution Control District, said in a news release.

High moisture levels from recent rain followed by high temperatures tripled the level of fine particulates called PM 2.5 in the valley this week, the air district said.

The resulting unusually strong inversion layer is keeping temperatures high and trapping the particulates in the air basin.

The weather is the main problem, the district said, but added pollution will only make conditions worse.

Valley residents warned of "dangerously" high levels of air pollution

Central Valley Business Times, Friday, Nov 7, 2014

Extreme weather conditions have led to abnormally high pollution conditions rarely seen in the Valley this time of year, the San Joaquin Valley Air Pollution Control District says Friday.

"Because of abnormal weather conditions, we are experiencing unusually high pollution levels that are dangerous to public health. We are asking the public to refrain from burning and to also reduce driving," says Seyed Sadredin, the district's executive director and air pollution control officer.

Despite historically low emissions Valley-wide, higher moisture levels brought by recent rain followed by high temperatures tripled the level of fine particulates in the Valley mid-week, the district says.

The resulting unusually strong inversion layer is keeping temperatures high and trapping fine particulates in the air basin, resulting in unhealthy air quality throughout the Valley, it says.

Fine-particulate pollution is harmful to health, says the air district, and can cause respiratory and lung disease, heart attacks and even stroke. Air quality forecasters expect the current pattern to linger into the foreseeable future.

Local air officials have issued the season's first "no burning" declaration for all residential wood-burning devices, including devices registered with the district. The declaration affects Madera,

Fresno, Kings, Tulare and the Valley portion of Kern counties for Friday, Nov. 7. In these counties, any residential wood burning is prohibited. This declaration runs to midnight Friday.

Valley air quality dangerously unhealthy

By Staff reporter

Hanford Sentinel, Friday, Nov 7, 2014

The Valley is currently experiencing unusually high pollution levels that are dangerous to the public's health, a San Joaquin Valley Air District news release said.

According to the district, higher moisture levels left behind by the recent Halloween rain, followed by high temperatures have caused the level of fine particulates in the Valley air to triple.

Fine particulate pollution can cause respiratory and lung disease, heart attacks and stroke.

Although unusual weather conditions are the primary cause for high pollution, the district said added pollution could make the current conditions even worse.

"We are asking the public to refrain from burning and to also reduce driving," Seyed Sadredin, the air district's executive director and air pollution control officer, said in a statement. "These collective efforts to reduce pollution will help protect your health and the health of your loved ones."

Forecasters predict the current pollution conditions will last well into next week.

"It doesn't look like there is anything on the horizon that is going to give the Valley [air] a clean, fresh start," Scott Borgioli, WeatherAg meteorologist, said. "We might get some winds beginning the middle of next week, but it's iffy."

A "no burn" day was issued by the district Friday and applies to all residential wood-burning devices, including those registered with the district, in Kings County. The declaration will last until midnight Friday.

For information on current burn forecasts, visit www.valleyair.org.

Air district says Valley having high levels of pollution

The Porterville Recorder, Friday, Nov 7, 2014

Extreme weather conditions have led to abnormally high pollution conditions rarely seen in the Valley this time of year, the San Joaquin Valley Air Pollution Control District announced late Thursday.

"Because of abnormal weather conditions, we are experiencing unusually high pollution levels that are dangerous to public health. We are asking the public to refrain from burning and to also reduce driving," said Seyed Sadredin, the Air District's executive director and air pollution control officer.

"These collective efforts to reduce pollution will help protect your health and the health of your loved ones," Sadredin said.

Despite historically low emissions Valley-wide, higher moisture levels brought about by recent rain followed by high temperatures tripled the level of fine particulates (PM2.5) in the air in the Valley midweek. The resulting unusually strong inversion layer is keeping temperatures high and trapping fine particulates in the air basin, resulting in unhealthy air quality throughout the Valley. While abnormal weather conditions are the primary cause for the high pollution, any added pollution will make the current conditions even worse. District officials urge residents to refrain from burning wood and to reduce driving when possible.

Fine-particulate pollution is harmful to health and can cause respiratory and lung disease, heart attacks and strokes. Air quality forecasters expect the current pattern to linger into the foreseeable future.

Local air officials have issued the season's first No Burning residential wood-burning declaration. The declaration, in effect until midnight Friday, affects Madera, Fresno, Kings, Tulare and the Valley portion of Kern counties today.