

2014 was California's hottest year, and it wasn't even close

By Kurtis Alexander, staff writer
S.F. Chronicle, Thursday, Jan. 8, 2015

California not only sweated through its hottest year on record in 2014 but obliterated the previous mark by nearly 2 degrees, federal scientists said Thursday, while experiencing firsthand some of the worst fears of a warming planet — from intensified drought to melting snowpack.

The state's average temperature last year was 61.5 degrees, more than 4 degrees above the 20th century average, the National Oceanic and Atmospheric Administration reported. The previous hottest year was 1934, at 59.7 degrees, though many of the balmiest periods have come more recently, with seven of the 10 hottest years within the past two decades.

"There's a very clear warming trend in California," said Noah Diffenbaugh, an associate professor of environmental Earth system science at Stanford University, who studies climate change. "And not only are we seeing clear evidence of global warming and its impacts, but we're now seeing the impacts of global warming right here in western North America."

Scientists say rising temperatures have sometimes contributed to smoggier air, stunted growth of plants, extreme weather events and other abnormalities in the Golden State, but the biggest impacts recently have come with the crippling drought. Though many are hesitant to blame the state's three-year dry spell on global warming, consensus is that hot weather has exacerbated the situation — for example, by increasing evaporation.

"The warm year in California did make the drought conditions worse," said Jake Crouch, a climate scientist at NOAA's National Climatic Data Center. "The drought and the heat kind of reinforced each other."

While acknowledging the connection between temperature and dry times, a study led by NOAA, released in December, concluded that the cause of the drought was not man-made warming, but naturally changing ocean conditions. Other research, however, has suggested a link between climate change and the high-pressure weather system that hung over the Pacific Ocean in recent years and steered storms away from California.

The state's lack of precipitation also combined with last year's warm temperatures to make for very little snow in the Sierra. As of Thursday, the state's snowpack, which is vital because it provides the bulk of California's water supply, was just 41 percent of average. Long-term studies suggest that snowpack in Western states has been in decline since the 1950s.

Dirty Air

Rising temperatures can also damage air quality. Seyed Sadredin, the executive director of the San Joaquin Valley Air Pollution Control District, said it's hard to parse out the impacts of heat and drought, but that the combination helped make 2014 one of the dirtiest years in decades.

Dry weather fueled stagnation and temperature inversions, Sadredin explained, trapping in pollutants, most significantly in the Central Valley and Los Angeles area. A lack of storms, meanwhile, kept bad air from clearing out, he said.

"Theoretically, of course, if we do get a rise in temperatures that's a recipe for an increase in ozone and smog ultimately," he said. "But we shouldn't reach to broad conclusions yet."

Since the valley air district has little control over the weather, it has sought to cut vehicle and industrial emissions in the region.

"Because of all the work that has been done by business and the public, that's what really saved the day," he said.

Temperatures, of course, have varied over the centuries. But human activities in the past 100 years, namely the burning of fossil fuels and deforestation, have increasingly added carbon dioxide and other greenhouse gases to the atmosphere and trapped heat. Scientists expect temperatures to continue to climb.

On Monday, Gov. Jerry Brown announced a plan for California to attack warming by increasing the amount of electricity derived from renewable sources from 33 to 50 percent and reducing the state's reliance on petroleum products by half.

The state already leads the nation in climate regulation.

Long-term trend

Last year, California was among three other Western states — Nevada, Arizona and Alaska — that experienced their warmest year since NOAA's record-keeping began in 1895, the data show.

Anchorage, Alaska, boasted the anomaly of not seeing a single day last year below zero degrees for the first time in the 101 years of records there.

The heat in the West helped to push the average nationwide temperature above the 20th century average for the 18th year in a row, according to NOAA. The contiguous United States recorded its 34th warmest year in 2014 with an average temperature of 52.6 degrees.

The nationwide average wasn't higher because much of the eastern United States experienced cooler weather last year compared with the rest of the nation — and the world — the data show.

NOAA also reported Thursday that last year's weather included eight disasters in the U.S., each causing more than \$1 billion of damage: six severe storms, flooding in Michigan and the Northeast, and the drought in the West. Scientists generally agree that extreme weather events are more likely as the planet warms.

NOAA plans to release global temperature data next week, but already one of four major international weather services is chalking up 2014 as the planet's hottest.

The Japan Meteorological Agency reported this week that the average worldwide surface temperature was 1.1 degrees warmer last year than the 20th century average — and the warmest since the agency's record-keeping began in 1891.

Visalia seeks grant to launch shuttle service to Fresno

By Lewis Griswold, staff writer

The Fresno Bee, Saturday, Jan. 10, 2015

Visalia officials hope to launch shuttle bus service from Visalia to Fresno this fall.

The city has applied for a \$583,053 grant from the San Joaquin Valley Air Pollution Control District arguing in its application that a shuttle would spare the air.

If approved, the grant would buy three buses and subsidize fares until ridership grows.

Visalia is competing against other entities for grant money, but "I feel very good about the application," said Visalia Transit Manager Monty Cox.

The air district is expected to decide next month.

A Visalia-to-Fresno shuttle has been discussed on and off for years, but a recent scare — the potential loss of airline service at the Visalia Municipal Airport — prompted city officials to work toward a shuttle to the Fresno airport and other stops.

"We get requests for it all the time," Cox said.

Current transportation options include Greyhound and at least one limousine company.

Greyhound has bus service five times a day from Visalia to downtown Fresno for about \$20 one way, and Classic Charter offers door-to-door car service to the Fresno airport for \$119 for three passengers.

Cox said the city's proposed shuttle would be supplemental to what Greyhound and Classic Charter offer.

Under the city's proposal, one-way tickets would be discounted to \$10 for three years to draw passengers.

If there are three passengers per bus, one-way tickets of \$20 would cover costs, Cox said. If the shuttle draws six passengers per bus, on average one-way tickets would be \$10 and cover costs.

Students, seniors and the disabled could get monthly passes at a discount, he said.

Last week, the Visalia City Council gave a unanimous thumbs-up to seeking the grant.

"We think there's a great untapped market," Mayor Steve Nelsen said.

Potential shuttle riders are patients going to Kaiser Permanente Fresno Medical Center or the Veterans Administration hospital, travelers bound for the Fresno airport and students attending Fresno State, he said.

Fresno State, Fresno Yosemite International Airport and other governmental entities wrote letters in support of the city's application.

The proposed shuttle initially would be weekdays only, departing the Visalia Transit Center at 6 and 9 a.m., and 1 and 4 p.m.

The 16-passenger shuttle would stop at the Visalia and Fresno airports, Fresno State, Manchester Center and Courthouse Park for access to Fresno Area Express routes.

From downtown Visalia to the Fresno airport would take an estimated 55 minutes, and to Fresno State an additional 11 minutes.

The return trip to Visalia would stop at the Visalia airport and end at the Visalia Transit Center.

Oil company involved in Arvin gas leak investigated for oil tank emissions

By Ruth Brown, staff writer

Bakersfield Californian, Friday, Jan. 9, 2015

The Bakersfield oil company responsible for a March gas pipeline leak in Arvin forcing the nearly nine-month-long evacuation of three dozen residents, was issued a notice of violation Dec. 29 for emitting gas from nearby oil storage tanks without a permit.

Three of Petro Capital Resources LLC's four 8,000-gallon light crude oil storage tanks west of Arvin High School at the intersection of Comanche Drive and Varsity Avenue were involved.

Gustavo Aguirre Jr., project coordinator for the Kern Environmental Enforcement Network, made a Dec. 19 report to the San Joaquin Valley Air Pollution Control District about possible gas emissions coming from the tanks.

KEEN focuses on environmental health problems in Kern County and supports the enforcement of applicable laws. It is a partnership between community members and governmental agencies.

The December report stated that KEEN used infrared cameras to determine that emissions were being released. The air district investigates such complaints and issues violations if warranted.

Air district inspector Alex Haulman wrote in a complaint investigation report that when he arrived at the scene that same day he "immediately detected a strong smell reminiscent of gasoline." He also reported hearing "vapors hissing" from the pressure vacuum relief valve on top of a tank.

The pressure valve is a tight seal that usually only opens when pressure inside reaches an excessive level. It helps reduce air pollution and emissions.

Jeff Williams, PCR's production manager, told the air district the company has had the area's lease shut in since March. That increased pressure inside the tanks, raised the fluid level and increased pressure on the well casing, according to the investigation report.

Because of that, PCR was forced to occasionally open the casing valves to release some pressure. If not, the line could crack the well casing and lead to possible liquid and vapor contamination of surrounding soil.

So, PCR piped gas into the tanks but without the required permit.

"They were trying to do things that in their mind were more safe," said Seyed Sadredin, executive director for the Air Pollution Control District. "But unfortunately they didn't get a permit."

The investigation into the type of gas emitted is ongoing, he said. It could be natural gases and carbons but may also contain some toxic emissions such as benzene.

"So far, the preliminary (estimate) is that the amount of gas is minimal," Sadredin said.

The tanks in question neighbor the eight evacuated Nelson Court homes that were near PCR's leaky pipeline.

After that pipeline leak, PCR did submit an application to the air district to install a flare. But after learning the air district would have to publicly notify all residents in the area, the company decided not to pursue the flare, said Sadredin.

The violation issued to PCR could result in fines. The cost will vary based on the extent of the problem, whether it was hazardous and other circumstances, said Jaime Holt, the air district's spokeswoman.

The report directed PCR to contact the air district's permitting department to discuss solutions. It was unclear Thursday whether that had occurred.

December's notice is not PCR's first violation of air district rules.

In October 2013, the company was issued two other notices of violation, Holt said, at PCR's property near Highway 65 and Lerdo Highway north of Bakersfield.

The first was for failing to perform periodic inspections of the components in light oil services and for failing to maintain an inspection log.

The second notice of violation was for storing more volatile liquid than the company's permit allowed. Subsequently, PCR applied for a permit.

Efforts to contact a PCR representative were unsuccessful Thursday.

Great weather but awful air

By Steven Mayer, staff writer

Bakersfield Californian, Friday, Jan. 9, 2015

Bakersfield can't seem to win for losing.

Few cities in the nation this time of year can boast the sort of idyllic, spring-like daytime temperatures residents of the southern San Joaquin Valley have been enjoying over the past several days.

But in Bakersfield, delightful winter weather often equals horrible winter air.

Weather and air quality experts say the high pressure ridge that settled over the southern San Joaquin Valley this week has pushed the inversion layer -- a weather ceiling that traps and concentrates wintertime particulate pollution -- down to about 1,000 feet.

An inversion layer at 4,000 feet is more typical, said Seyed Sadredin, executive director of the San Joaquin Valley Air Pollution Control District.

We're seeing "a mini-version," he said, of what we experienced last winter when drought conditions left high pressure in control throughout much of the season.

On Wednesday, an air monitoring station in central Bakersfield, which measures hourly concentrations of PM2.5, showed PM levels spiking to 75 micrograms per cubic meter or higher for 16 of the day's 24 hours. According to the air district's Real-Time Air Advisory Network, or RAAN, a measurement of 75 or more is known as Level 5, or "very unhealthy." Outdoor exercise is not recommended in these conditions, even for healthy adults, and is prohibited at area schools.

On Thursday, the levels moderated only slightly, and remained at Level 4 --"unhealthy" -- and Level 5 throughout the day.

A 2011 joint Fresno State-UC San Francisco epidemiological study of valley residents found elevated emergency room admissions for asthma, even on days when daily PM2.5 concentrations were lower than federal standards.

But PMs have been linked to more serious illnesses than asthma. The mixture of tiny solid particles and liquid droplets in the air can become embedded in the lungs and even migrate into the bloodstream. They have been linked to heart disease and stroke.

According to the air district, exercising can magnify risk in at least two ways.

First, the amount of inhaled air rises substantially when breathing faster and more deeply.

And second, breathing harder means that air pollutants, especially the smallest particles, are more likely to penetrate the aveolar region of the lungs where absorption into the bloodstream occurs.

Sadredin noted that the air district's own computer models predicted higher PM levels than actually occurred. He attributed the discrepancy to more stringent wood burning rules, instituted when the season began in November.

He also explained the very low PM readings at an air monitor in the town of Lebec, located in the mountains south of Bakersfield.

"Lebec is above the inversion layer," he said. "It's a clear indication of where the lid is in elevation. Everything is trapped beneath it."

Fortunately, some relief may be coming.

David Spector, a meteorologist at the National Weather Service's Hanford station, said a weak low pressure system is expected Friday night and Saturday that could stir things up slightly.

A second, stronger system coming Sunday should be even more beneficial.

"The first will raise our inversion layer," Spector said. "The second should raise it more if not mix it out completely."

That should significantly reduce concentration levels of the dreaded PMs. For a few days at least.

"We may have a repeat of these (high-pressure, high pollution) conditions by Wednesday or Thursday of next week," Spector said.

Or to paraphrase, Bakersfield can't seem to win for losing.

[Fresno Bee Earth Log, Friday, Jan. 9, 2015:](#)

Particles fill foggy Valley air, making breathing dangerous

By Mark Grossi

Air monitors in the San Joaquin Valley show a spike in dangerous particle pollution — including Hanford readings three times the federal health threshold.

Monitors in Clovis, Fresno, Visalia, Porterville and Bakersfield are recording levels near twice the health standard for the pollution, called PM-2.5. The microscopic debris contains chemicals, soot, moisture and bits of dust.

The San Joaquin Valley Air Pollution Control District on Friday announced continuing restrictions on wood-burning in fireplaces throughout the Valley. No one is allowed to burn wood except in a federally certified stove, insert or other similar device that has been registered with the air district.

Children, senior citizens and people with lung problems should avoid the outdoors while the readings are spiking. The air district posts hourly updates on its website.

The debris is trapped in the Valley's bowl. No storms have passed through the region since December, so there has not been enough air movement to clear out the pollution. But storm systems were supposed to pass through the southern part of the Valley late Friday, air officials said.

There have been exceedances of the PM-2.5 standard daily in the Valley since New Year's Day.

Health scientists say PM-2.5 is dangerous because the small specks can evade the body's natural defenses, lodging in the lungs and passing into the blood stream. PM-2.5 can trigger lung and heart problems. It also is blamed for about 800 premature deaths annually in the Valley.