

Scientists say ozone from Asia contributes to the West's pollution

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High above the Big Sur coast, Ian Faloona is finding pollution on the edge of the continent, a place that should have some of the country's cleanest air.

From an astronomical observatory on Chews Ridge in the Santa Lucia Mountains, the University of California, Davis atmospheric scientist has for the last three years measured ozone, the lung-damaging gas in smog, as it arrives to California. The monitoring site, more than 5,000 feet above sea level on a pine-studded overlook above the lowest layer of the atmosphere, gives Faloona access to undisturbed air from across the Pacific before it is fouled by U.S. pollution sources.

He and other scientists at rural, high-altitude sites across the western U.S. have been documenting rising levels of ozone, which can trigger asthma attacks, worsen heart and lung disease and lead to premature deaths, even as emissions have plummeted nationwide over the last few decades.

Soaring emissions from China and other fast-growing Asian countries are blowing across the Pacific Ocean, they say, increasing baseline levels of ozone in the western U.S. In about a week, winds carry ozone formed by emissions from cars, factories and power plants in Asia to the U.S. West Coast, where it can add to locally generated pollution, worsening smog in cities such as Bakersfield, Fresno and Los Angeles.

The phenomenon is fueling a debate about just how much Asia is to

blame for bad air in the U.S, one that could soon have health consequences for people across the West.

Experts say that as U.S. air quality improves, Asian emissions - previously thought to have a negligible effect here - are having a stronger influence on smog levels, particularly in western states that sit at higher elevation and are first exposed to the pollutants. In a development that has troubled health advocates, some local pollution regulators have begun arguing that they should not be penalized if Asian pollution is causing local smog to exceed health standards under the Clean Air Act.

Spearheading that effort is the San Joaquin Valley Air Pollution Control District, which regulates industry to protect nearly 4 million people from Stockton to Bakersfield who breathe some of the nation's dirtiest air.

The regional agency has made quantifying Asia's contribution to local pollution a top priority in the last few years. In 2011, the district began funding Faloon's research, and this spring at Yosemite National Park, it is sponsoring a three-day transboundary [ozone pollution](#) conference for scientists and policymakers.

Last year, the agency submitted a first-of-its-kind petition to the U.S. Environmental Protection Agency asking to be exempted from penalties for violating a health standard because of ozone pollution from Asia. On Aug. 10, 2012, pollution from Asia pushed smog levels in Fresno above a federal standard, the air district said.

The EPA imposed penalties on the region after it failed to meet a 2010 deadline to clean up ozone pollution. Valley air quality regulators have since collected more than \$100 million in fines, mostly through an extra \$12 a year in vehicle registration fees.

"Our residents shouldn't be penalized for pollution that comes from

elsewhere," said Seyed Sadredin, executive director of the San Joaquin Valley air quality district.

The EPA did not act on the San Joaquin Valley air district's request, saying that it was not submitted through the appropriate process and that the district can meet the health standard violated despite the added pollution from Asia.

Jed Anderson, a Houston-area lawyer who focuses on air quality compliance, said the request by the San Joaquin Valley is "not going to be unique for very long." It opens the door for air quality agencies across the nation to consider foreign pollution as a factor in local air quality violations.

The EPA has proposed tightening ozone limits, from 75 parts per billion to between 65 and 70 parts per billion, later this year. A new standard would put more areas of the country in violation of air quality standards and place parts of the West in a tough spot between a rising baseline of ozone and stricter federal limits.

Limiting pollution flowing in from Asia would require an international treaty, said Owen Cooper, an atmospheric scientist at the Cooperative Institute for Research in Environmental Sciences in Boulder, Colo.

Such a deal is unlikely, leaving U.S. regulators to eke out further cuts in smog-forming pollutants, he said. "Here in Denver, our emissions have come down enormously due to cleaner cars, but our ozone pollution isn't coming down. It's kind of stuck."

Officials in the San Joaquin Valley, challenged by bowl-shaped topography that traps pollution, have long attributed the region's dirty air to factors other than local industry, including cars and refineries in the Bay Area and long-distance truckers on Interstate 5. Their recent focus

on ozone from Asia has drawn renewed criticism from health advocates, who say state and local regulators should devote their resources to curbing emissions from cars, factories, farms and other sources they have the power to control.

Dolores Weller, director of the Central Valley Air Quality Coalition, says the air district's attention to ozone from Asia is the latest example of officials "not focusing in on homegrown pollution and continuing to look for exemptions and further excuses."

"It's just an easier target for an air district under pressure from local industries," Weller said.

Although estimates vary, recently published studies have found that Asian ozone contributes 3 to 8 parts per billion of the pollution in low-elevation parts of Southern California, such as Bakersfield and Los Angeles, and up to 15 in high-elevation regions of the West. It's a small contribution but could make the difference between a bad air day and one that meets the current health standard of 75 parts per billion.

On Chews Ridge, Faloon and his graduate assistant, Andrew Post, have measured ozone concentrations as high as 80 parts per billion. They have also found evidence that the gas is sinking and mixing into the air in the San Joaquin Valley, boosting smog levels in such cities as Bakersfield and Fresno.

A portion of the ozone blowing into California is natural, migrating down from the stratosphere or formed from compounds released by plants. Winds transport the most ozone pollution from Asia during the spring, not during the height of smog season in late summer.

Although it's a concern, [ozone](#) from Asia is not as significant a problem as San Joaquin Valley pollution regulators make it out to be, said Jared

Blumenfeld, administrator for the EPA's Pacific Southwest region.

"We can't put too great an emphasis on sources that may not have a large contribution,' Blumenfeld said.

Still, the attention to the issue is a shift from decades ago, when Los Angeles and other major cities battled crippling smog and treated it as a local matter. Now that climate change has put the spotlight on the global rise of carbon dioxide, other pollutants are increasingly being viewed in the same way, as international concerns.

That's what Faloona sees from his ridge-top monitoring site: Two air-quality problems that are no longer divorced from one another.

To the west, he can see a sliver of the Pacific Ocean, where his [air quality](#) monitor's plastic intake tube is pointed and pumping away. Looking inland, he sees the San Joaquin Valley, blanketed in a layer of air [pollution](#).

"People think of these pollutants as relatively short-lived and think they don't make it that far," Faloona said. "But we've realized it's all connected."

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