

Air pollution from China undermining gains in California, Western states

By Steve Scauzillo , San Gabriel Valley
Tribune



This Dec. 10, 2009 file photo shows smog shrouding a building under construction in Beijing. A new study in the journal *Nature* finds that while U.S. controls on air pollution have been driving down a major ingredient of smog, ozone blowing over from Asia is raising background levels over western North America. Lead author Owen Cooper, a research scientist at the University of Colorado, says amounts are small and have been traced only at middle altitudes. But he says they have been steadily rising, and could complicate U.S. efforts to lower ozone levels at home. (AP Photo/Andy Wong, file)

Aside from smartphones, toys and computers, China exports a different kind of product into the western United States — air pollution.

A study released Monday by the Jet Propulsion Laboratory and NASA found that smog-forming chemicals making their way across the Pacific Ocean from China are undermining the progress California has made in reducing ozone, the most caustic component in L.A. smog.

From 2005 through 2010, western states have cut ozone-forming air pollutants by 21 percent, but the NASA/JPL study found no drop at all when measuring smog-forming gases in the midtroposphere, located 10,000 to 30,000 feet above ground level.

Just under half of what should have been a 2 percent drop was offset by China's contribution, stemming from a 21 percent rise in ozone-forming pollutants emitted by car tailpipes and coal plants from a robust Chinese economy

during the six years studied. Slightly more than half was due to natural causes — stratospheric ozone descending through the sky as a result of cyclical atmospheric winds helped by an El Niño in 2009-2010, the scientists concluded.

“The contribution from China increased steadily throughout the study, and we don’t know what will happen to it in the future because it depends on human rather than natural factors,” said JPL scientist Jessica Neu, co-author of the study with Willem Verstraeten, an atmospheric chemist at Wageningen University in the Netherlands. The study was published Monday in the online journal Nature Geoscience.

“In a manner of speaking, China is exporting its air pollution to the West Coast of America,” Verstraeten told the online publication phys.org.

About half of the pollutants in the midtroposphere reach the surface as ozone and affect the air people breathe, Neu said. Ground-level ozone causes shortness of breath, eye irritation and sore throats, and long exposure can prematurely age the lungs and cause lung disease, according to the U.S. Environmental Protection Agency and hundreds of studies done in Southern California.

Previous studies published in the Journal of Geophysical Research-Atmospheres in 2012 estimated Asian pollution accounts for about 20 percent of the total ozone pollution in the spring in the western states such as California, Oregon, Washington, Montana and Wyoming. Some scientists estimate Asian air pollution pushes Southern California above the 75 part per billion federal hourly ozone standard for about 53 percent of the recorded exceedances.

The most recent study quantifies the impact of Chinese air pollution on the West Coast. It also raises the issue of whether countries need to treat smog as a global pollutant that knows no borders.

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“This is the first time we are showing, even if you are making big efforts to reduce your emissions, what other countries are doing could offset that,” Neu said.

Ozone in the midtroposphere also acts as a greenhouse gas, absorbing radiation in a similar way as carbon dioxide, Neu said. By reducing ozone, greenhouse gases that cause global climate change are reduced, she said.

Joe Lyou, president of the Coalition for Clean Air and Gov. Jerry Brown’s appointee to the South Coast Air Quality Management District governing board, said he hopes the JPL study will give air pollution control managers in all countries more answers in the fight for clean air.

“Our point of view is, air pollution should be cleaned up everywhere, including China,” Lyou said. “The things we’ve done in reducing our air pollution, China can adopt.”