

Asian emissions contribute to air pollution in western United States: study

March 2 2012

As Asian countries develop, they are emitting more ozone precursors that pollute surface level air. Many studies have documented this pollution being carried by air currents to the western United States. To learn more about the mechanisms that transport air pollution across the ocean and determine the effects of Asian air pollution on air quality in the western United States, Lin et al. analyzed in situ and satellite measurements from May 2010 to June 2010 using a global high-resolution climate chemistry model.

They quantified the contribution of Asian pollution to surface [ozone levels](#) in both densely populated regions such as the Los Angeles area and rural areas such as national parks. They find that Asian pollution contributes as much as 20 percent of total ozone during springtime pollution episodes in western U.S. surface air.

Current guidelines from the [Environmental Protection Agency](#) dictate that, averaging over 8 hours, surface level air should have no more than 75 parts per billion per hour by volume of ozone. Although local pollution plays a large role on days when that standard is not met in Southern California, the authors estimate that 53 percent of the instances where that limit was exceeded would not have occurred without the contribution from Asian [air pollution](#).

The researchers also find that an index based on satellite observations of Asian pollution plumes could serve as a qualitative early warning indicator, with a lead time of one to three days, of Asian pollution

influence on western U.S. air quality.

More information: Transport of Asian ozone pollution into surface air over the western United States in spring, *Journal of Geophysical Research-Atmospheres*, [doi:10.1029/2011JD016961](https://doi.org/10.1029/2011JD016961), 2012

Provided by American Geophysical Union

Citation: Asian emissions contribute to air pollution in western United States: study (2012, March 2) retrieved 1 May 2024 from <https://phys.org/news/2012-03-asian-emissions-contribute-air-pollution.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--