

Pandemic provides unique opportunity for atmospheric chemists

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As the COVID-19 pandemic slowed travel and business around the world, pollution emission rates dropped in response. With fewer cars on the road and clearer skies, atmospheric chemists jumped at the opportunity to study the impact of reduced emissions outside the lab. A news story in *Chemical & Engineering News*, the weekly newsmagazine of the American Chemical Society, details early findings, which could

help address climate change and air quality problems.

The first atmospheric indicators came from China, which imposed strict lockdown procedures in January to slow the spread of the novel coronavirus. As a result, emissions decreased "at a rate and scale never observed before," writes Senior Correspondent Katherine Bourzac. As the rest of the world later reacted with stay-at-home orders and other safety measures, atmospheric chemists leapt into action to capture what data they could about the environmental impact. Typical atmospheric chemistry experiments require complex computer models and reaction chambers in the lab because emissions in the real world usually change very slowly. The dramatic shift in everyday life caused by the pandemic lockdowns allowed researchers to collect information in real time, which they say could lead to a deeper understanding of atmospheric chemistry as a whole.

As lockdowns dramatically reduced traffic, carbon dioxide (CO₂) and nitrogen dioxide (NO₂) emissions dropped in kind. For example, in New Zealand, researchers observed 80% lower CO₂ emissions, matching the lower number of cars on the road. Similar trends were observed in major metropolitan areas across the world. While these changes lasted only as long as the stay-at-home orders, atmospheric researchers say they provide a strong model to help persuade policymakers to adopt more climate-friendly legislation. There were a few unexpected observations, too. For example, ozone levels increased in some cities despite lower NO₂ emissions. Despite the challenging circumstances of the pandemic, [atmospheric chemists](#) hope that the data collected will have a positive impact on their field.

More information: "COVID-19 lockdowns had strange effects on air pollution across the globe," cenm.ag/strange-effects

Provided by American Chemical Society

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