

Could Cleaner Air Actually Intensify Global Warming?

by NPR Staff

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Philippe Lopez/AFP/Getty Images

Is the solution to global warning more pollution?

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As much of the world marked Earth Day this past week, the Environmental Protection Agency reported that air pollution has declined dramatically over the past 20 years. It sounds like good news, but science writer Eli Kintisch argues that there's a surprising downside: Cleaner air might actually intensify global warming.

"If we continue to cut back on smoke pouring forth from industrial smokestacks, the increase in global warming could be profound," Kintisch writes in an opinion piece for the *Los Angeles Times*.

Kintisch isn't talking about greenhouse gases like carbon dioxide; he's talking about another kind of pollutant we put in the sky -- "like aerosols from a spray can," he tells NPR's Guy Raz. "It turns out that those particles have a profound effect on maintaining the planet's temperature."

Greenhouse gases and aerosol pollutants work in opposing ways on the Earth's climate, Kintisch explains. "The greenhouse gases warm the planet when they're emitted, because they absorb heat reflected up from the ground -- the greenhouse effect. These aerosols, though, do the opposite. They block sunlight, they make clouds more reflective -- and by doing that, they actually cool the planet.

"The problem is that we're cutting the cooling pollution as we make our air cleaner," he says.

The Scope Of The Problem: Still A Mystery

Some scientists, he says, are confident that this is connected to global warming, but they don't know how large the effect is. "That's the frightening thing, because if it's a big cooling effect, it means that we've been actually warming the planet more than we know," Kintisch says. "As we take away that unexpectedly helpful cooling mask, we're going to be facing more global warming than we expected.

"If, however, the aerosol cooling is less than we fear, then it won't be such a big deal as we clean our air, though it will still be an effect."

The solution, of course, isn't to stop cutting air pollution. "We have to continue doing that, because these pollutants contribute to asthma, they contribute to respiratory diseases, they cause all sorts of health problems, and they make our environment dirty," he says. "But there's a variety of answers that are more sophisticated than simply continuing to pollute."

Gunk To The Rescue

One of those answers is pretty radical: injecting new pollutants into the stratosphere while we continue to clean up our emissions. It's one of the theories of "geoengineering" that Kintisch explores in his new book, *Hack the Planet*.

It sounds contradictory, but the idea is actually based on a natural polluter -- volcanoes. Kintisch points out that nearly 20 years before the eruption of Eyjafjallajokull in Iceland shut down air traffic across Europe, a much bigger volcano in the Philippines affected the climate over a much broader area.

"In 1991, when Mount Pinatubo erupted, it put tons of sulfur into the stratosphere," he says. "Those sulfur aerosols cooled the planet."

So if we found ourselves in a climate crisis where oceans were rising rapidly and coastal areas were flooding, some scientists think "we could mimic the cooling effect of natural volcanoes and make man-made volcanoes by putting our own gunk, essentially, up in the upper atmosphere," Kintisch says.

"It's unclear whether we would be able to respond and actually stop a disintegrating ice sheet situation," he cautions. "However, some scientists think we're getting near that worse-case scenario right now."