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From: Deborah Zabarenko, Reuters Published March 15, 2006 12:00 AM

NASA Says Northern Ozone Pollution Spurs Arctic Warming

WASHINGTON — Ozone pollution in the Northern Hemisphere, churned out by factories and vehicles that burn fossil fuels, is a major factor in the dramatic warming of the Arctic zone, NASA climate scientists reported Tuesday.

This finding is surprising, since ozone has been considered a minor player in the study of global climate change, according to Drew Shindell, a research scientist at NASA's Goddard Institute for Space Studies in New York City.

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<u>Carbon dioxide</u> has long been considered a key cause of overall <u>global warming</u>, because it remains in the atmosphere for a long time, Shindell said in a telephone interview.

But ozone -- the damaging, heat-trapping tropospheric ozone encountered at lower levels of the atmosphere, as opposed to the protective ozone observed at higher altitude -- was seen as fairly perishable and therefore less of a factor, he said.

Globally, ozone accounts for perhaps one-seventh of the global warming and climate change that carbon dioxide does, Shindell said. However, a new study of climate change over the past 100 years indicates that ozone may be responsible for as much as 50 percent of the warming in the Arctic

This is because many of the world's most highly industrialized nations are in the Northern Hemisphere, and at relatively high latitudes. For most of the year, that means the ozone produced in these countries is blown by prevailing winds north and east, toward the Arctic Circle.

"Instead of being this tiny player, (ozone) can be more like 30 or 40 or even 50 percent of the cause of warming that we're seeing in the Arctic now," Shindell said. "It's very dramatic."

In computer models using climate data going back to 1880, environmental scientists found Arctic temperatures remained normal until about 1950. After that, the model shows higher temperatures, widely spread around the Arctic region

This rise in temperatures is linked to the rise in tropospheric ozone at northern latitudes, Shindell

"Global warming has really taken off since the 1970s," he said. "The warming in the past several decades has been more than it was the whole previous record, which is about 100 years before that "

Arctic warming has been more extreme than global warming overall, he said, because as snow and ice melt they uncover darker-colored ground or water that absorb heat, accelerating warming.

Source: Reuters

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