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Ground Level Ozone Is Killing Us: How Global Warming Is Being Twisted To Scare Americans

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The Union of Concerned Scientists (UCS) released a report on the connection between global climate change and increased ground-level ozone, a pollutant and respiratory irritant when present in excess, using Intergovernmental Panel on Climate Change (IPCC) research as their basis.

But as man caused climate change skeptic Patrick J. Michaels, Senior Fellow in Environmental Studies at the Cato Institute explains, the data isn't flawed mathematically, it covers too narrow a period of time to conclude that human activity such as the release of greenhouse gases has created environmental peril. Not only is the UCS misleading the public in characterizing the current warming trend as extraordinary, their linkage between the normal warming of the last fifty years and ozone levels is inaccurate.

The Union of Concerned Scientists, an organization that believes according to its website, http://www.ucsusa.org, "the Earth is warming and human activity is the primary cause," explains that increased temperatures are a catalyst for the formation of ozone which according to the UCS report is at unhealthy levels in many American cities. According to Dr. Jerome Paulson a pediatrician and director of the Mid-Atlantic Center for Children's Health and the Environment at Children's National Medical Center, the whole eastern third of the country and the entire southern tier fail to meet standards for ozone emissions.

Michaels commented that the UCS regional analyses are based on only a small number of measurement sites, and thus, they don't reflect air quality for an entire region.

Communities and schools are starting to take account of ozone levels, canceling recess and outdoor activities when the air concentration is dangerous (at least 151 parts per billion), but for kids with asthma, lower concentrations can still be dangerous according to the report.

According to Joel Schwartz, former Visiting Fellow at the American Enterprise Institute and Senior Consultant with the Blue Sky Consulting Group, ozone only accounts for 1 percent of all asthma exacerbations, so more cancellations of recess and other outdoor recreation may harm kids more than it helps.

"If [we] fail to act, American families will face increasing burdens in terms of respiratory illness, lost work days, school absences, and reduced productivity, said report co-author Sylvia Brandt, a resource economist professor at the University of Massachusetts, Amherst.

The Union of Concerned Scientists report includes the assumption temperatures are steadily rising, and the last decade was the hottest on record. If such a trend were to continue, the generation of harmful ozone would grow as a public health threat.

According to Michaels, models used by the IPCC and other climate scientists over emphasize the 20th century and only go back to the mid 19th century.

According to the report, to combat the interaction of ozone precursors and warming requires personal lifestyle modification, regulation, and altered business practices to mitigate the greenhouse effect and levels of pollutants that contribute to ozone pollution.

I asked the report authors : what can be done either on the business side or policy side to decrease the ground-level ozone accumulation?

Liz Perera, Washington representative for Climate Change Policy at the Union of Concerned Scientists and report co-author responded, "A lot of our nation's power plants emit large amounts of nitrogen oxide, and industry also releases volatile organic compounds [hydrocarbons that evaporate in the atmosphere including natural occurring biogenic compounds such as those released by vegetation] from different industrial processes. In addition, many of us can take personal actions to reduce the amount of ozone forming pollutants that we contribute to. Such as, we can take mass transit and ride our bikes instead of getting into cars and trucks to get around. We can take the train. In addition, things like mowing your lawn on days of high ozone are not a good idea."

According to Schwartz, the UCS may have mischaracterized how pollutants nitrogen oxide and volatile organic compounds (VOCs) contribute to ozone pollution. Schwartz confirmed that both nitrogen oxides and volatile organic compounds are precursors to ozone, and heat, especially during the summer months, does cause ground-level ozone to rise. Yet, nitrogen oxides and volatile organic compounds are not a one or the other situation when it comes to levels of ozone pollution. When there is a balance in nitrogen oxide and VOC levels, ozone levels are lower.

According to the report, current efforts to reduce ozone precursors are hampered by current climate change projections which exacerbate the formation of ozone. Temperatures are set to rise by 2020 by at least O.1 degrees Celsius. The authors say EPA clean air standards aimed to decrease the number of released pollutants fail to keep pace with increases in temperature causing pollutants to coalesce as Ozone at a rate certain to affect public health.

UCS portrays cities as culpable for rising ozone levels, but cities tend to be more balanced in their nitrogen oxide to VOC levels due to human reliance on fossil fuels and the associated release of nitrogen oxides compared to suburban and rural areas that tend to have unbalanced levels of VOCs.

Currently, the EPA allows ozone levels to be 75 parts per billion (ppb). In July the EPA is set to amend permitted levels to somewhere between 60 and 70 ppb. The World Health Organization ozone guideline is 50 ppb.

According to Joel Schwartz, ever the more stringent EPA standards on ozone have pushed ozone concentrations to well below healthy maximums. Not only did Schwartz characterize the current standards as less than natural background levels in some cities, he called the WHO guideline that the UCS report authors cite as reason to lower American emission standards as "very low."

According to the UCS report, excess ozone is particularly harmful to the young and elderly populations. An average of 3700 more elderly and 1400 more infants could be hospitalized per year for respiratory illnesses by the year 2020 due to ozone pollution. Youth are especially vulnerable to the effects of ozone because they inhale more air per unit of body weight allowing a higher concentration in their body to singe lung tissue. Once these children reach adulthood, their lungs naturally lose function. As they age, they will have less reserve capacity and may be more susceptible to diseases like emphysema according to Dr. Paulson.

Michaels confirmed that ozone can contribute to respiratory irritation, but to tie climate change of the last 50 years to an increase in pollution and pollution inspired disease is inaccurate. Partially due to stricter government standards, levels of pollution across the country have decreased at the same time diseases like asthma in children have become more prevalent.

The Union of Concerned Scientists believes that regulation and lifestyle adjustment can stymie the rise in ground-level ozone by 2050, yet ground-level ozone is already on the decline.

Efforts to limit ozone levels today follow efforts in the past to combat ozone depletion caused by CFCs, a component of coolants and aerosols.

I asked Brian Sussman, a meteorologist, radio talk show host at KSFO 560 AM in San Francisco, and the author of Climategate, isn't it ironic that the government spent money to combat ozone depletion, but they are now worried that ozone levels are too high?

Sussman responded that "from 1980 to 2005, ground level ozone fell 20 percent. In that same period, 1980 to 2005, population increased. Cars on the road increased. Trucks on the road increased. Plane flying increased, and yet, we saw ozone levels decline 20 percent.

Sussman said, "[they] use pollution to demonize capitalism."

It is important to note that upper level ozone is vital to the reflection of solar radiation which is different than ozone in the air we breath, which is a pulmonary irritant.

According to the UCS report, ozone levels are expected to keep children out of school for related illnesses an extra 944,000 days in 2020. Currently, 18 percent of families with asthmatic children have had a parent laid off or quit in order to take care of a symptomatic child. This results in lost earnings and lower potential future earnings. In 2020, costs stemming directly and indirectly from ozone related health concerns could reach 5.4 billion dollars (2008 dollars) according to the UCS report.

Respiratory illness certainly has public health and economic ramifications, yet with ozone levels declining, the impact of ground-level ozone pollution specifically on public health and the economy may be over stated.

The UCS is right in its claim that heat is a catalyst for the synthesis of VOCs and nitrogen oxides into ozone, and it is correct in that ozone is a respiratory irritant. Nonetheless, the drop in pollution levels and the normalcy of current climate change shows that the ozone pollution crisis and the climate change crisis that underpins the UCS's argument both are inflated to influence EPA regulations and inspire unnecessary changes to the American lifestyle.

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