

## ***Claim: Carbon pollution is a health hazard***

### ***REBUTTAL***

*The term “carbon pollution” is a deliberate, ambiguous, disingenuous term, designed to mislead people into thinking carbon dioxide is pollution. It is used by the environmentalists to confuse the environmental impacts of CO<sub>2</sub> emissions with the impact of the emissions of unwanted waste products of combustion. The burning of carbon-based fuels (fossil fuels – coal, oil, natural gas – and biofuels and biomass) converts the carbon in the fuels to carbon dioxide (CO<sub>2</sub>), which is an odorless invisible gas that is plant food and it is essential to life on the planet.*

*Because the burning of the fuel is never 100% efficient, trace amounts of pollutants including unburnt carbon are produced in the form of fine particulates (soot), hydrocarbon gases and carbon monoxide. In addition, trace amounts of sulfur oxides, nitrogen oxides and other pollutant constituents can be produced. In the US, all mobile and industrial stationary combustion sources must have emission control systems that remove the particulates and gaseous pollutants so that the emissions are in compliance with EPA’s emission standards. The ambient air pollutant concentrations have been decreasing for decades and are going to keep decreasing for the foreseeable future because of existing non-GHG-related regulations.*

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To ensure that the air is safe to breathe, the Clean Air Act (CAA) requires the EPA to set National Ambient Air Quality Standards (NAAQS) for the most harmful ubiquitous air pollutants. The NAAQS are set at levels requisite to protect human health and welfare with an adequate margin of safety. These ubiquitous pollutants are called the Criteria Air Pollutants and include: fine particulates (PM<sub>2.5</sub>), larger particulates (PM<sub>10</sub>), carbon monoxide, sulfur oxides, nitrogen oxides, lead, and ozone (O<sub>3</sub>). The CAA also required States to develop plans to manage the emissions and concentrations of these pollutants so that the NAAQS are attained in every part of the US.

As a result, most areas of the US attain the NAAQS for all the pollutants most of the time. The ambient concentrations have been decreasing for decades (see charts below) and are going to keep decreasing for the foreseeable future because of existing regulations. For the few areas of the US that are in

violation of a NAAQS, the States have (or are in the process of) developed plans to attain them in the near future.

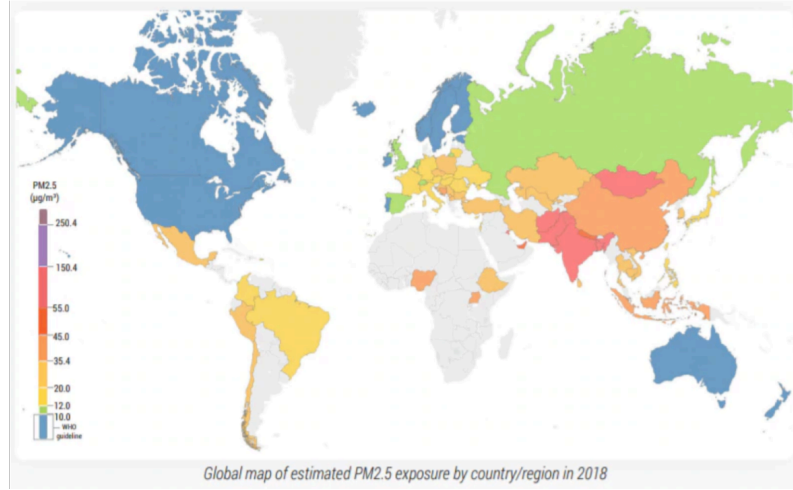
It needs to be noted that the current healthy air quality in the US has been achieved with existing regulations that have nothing to do with climate or CO<sub>2</sub> regulations.

The Obama EPA and the environmentalists have claimed that the co-benefits of CO<sub>2</sub> reductions justify the enactment of CO<sub>2</sub>-reduction regulations. These co-benefits assume that deaths and other health effects due to exposures of PM<sub>2.5</sub> and O<sub>3</sub> will be avoided. This assumption is erroneous because the relationships that EPA uses to calculate the purported health effects are based on epidemiology studies that used flawed statistical methods. When the proper methods are used, no causal relationship is found between either PM<sub>2.5</sub> or O<sub>3</sub> and premature mortality or other serious health effects at levels currently measured in the US.

The environmentalists also claim that rising temperatures caused by increasing CO<sub>2</sub> levels will exacerbate PM<sub>2.5</sub> and O<sub>3</sub> air pollution. This claim is flawed for a number of reasons.

First, as detailed elsewhere, there is no convincing evidence that increasing CO<sub>2</sub> levels has caused global temperatures to rise.

Second, there is no consistency in EPA model predictions that increasing temperatures will actually cause PM<sub>2.5</sub>, which is purported to cause most of the health effects and mortality, to increase. In fact, the country by country PM<sub>2.5</sub> from NASA and the WHO shows the U.S. with reliance on clean natural gas shows the lowest small particulate count along with Scandinavia and Australia in the world.

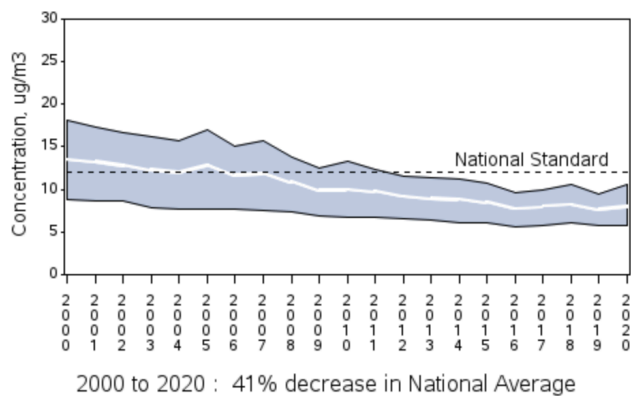


Although there is general agreement that higher temperatures will cause increased O<sub>3</sub> formation, that only occurs if emissions of O<sub>3</sub> precursors remain unchanged. The reality in the US is that O<sub>3</sub> precursors have been and will continue to decrease for the foreseeable future. EPA has shown ozone has actually decreased 33% since 1980 and PM<sub>2.5</sub> decreased 41% since 2000.

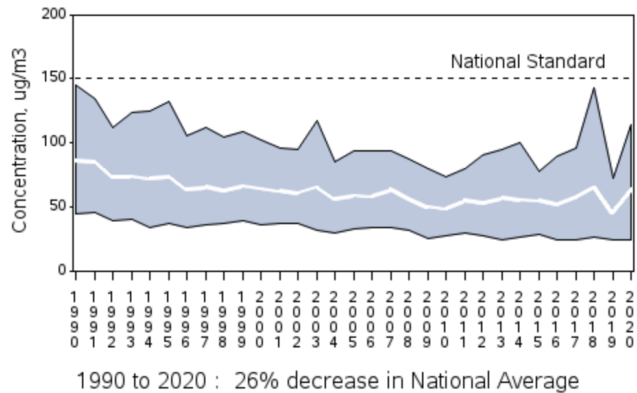
In addition, if for any reason, concentrations of any Criteria Pollutant ever went up so as to exceed its NAAQS anywhere in the Country, the CAA provides mechanisms that are already in place requiring the States to revise their plans to offset any increases.

Finally, as discussed above, the basic premise that PM<sub>2.5</sub> and O<sub>3</sub> are causing serious health effects in the US at their current levels is simply false

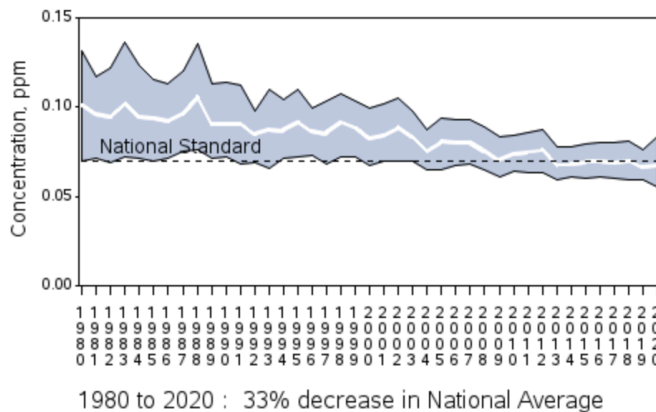
PM<sub>2.5</sub> Air Quality, 2000 - 2020  
(Seasonally-Weighted Annual Average)  
National Trend based on 390 Sites



**PM10 Air Quality, 1990 - 2020**  
 (Annual 2nd Maximum 24-Hour Average)  
 National Trend based on 100 Sites

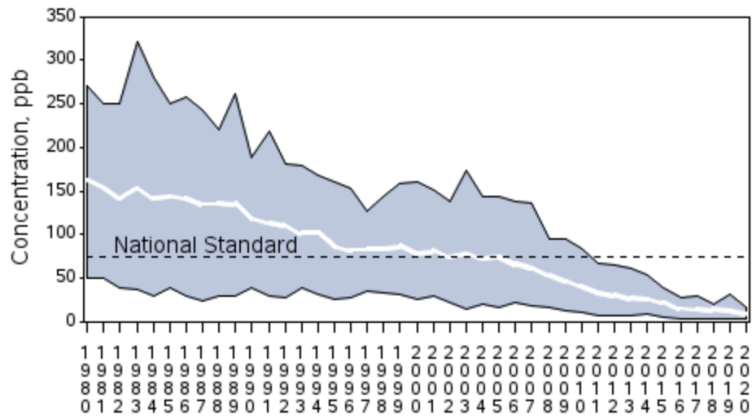


**Ozone Air Quality, 1980 - 2020**  
 (Annual 4th Maximum of Daily Max 8-Hour Average)  
 National Trend based on 188 Sites



Sulfur dioxide was a few decades ago in the news for its implication in acid rain. When sulfur dioxide reacts with rain or fog, sulfuric acid forms and becomes acid rain or mist (smog). Smog event in Donora PA in 1948 - 7,000 of the 14,000 population experienced damaged lungs, 20 died. The incident led to a series of clean air regulations and culminated in the US Clean Air Act of 1970. Acid rain continued to be a concern into the 1980s before measures were invoked that reduced SO<sub>2</sub> by 94%, an environmental success story.

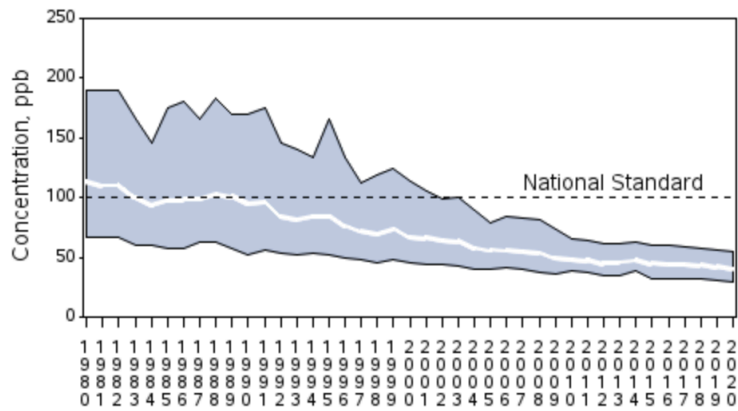
**SO2 Air Quality, 1980 - 2020**  
 (Annual 99th Percentile of Daily Max 1-Hour Average)  
 National Trend based on 32 Sites



1980 to 2020 : 94% decrease in National Average

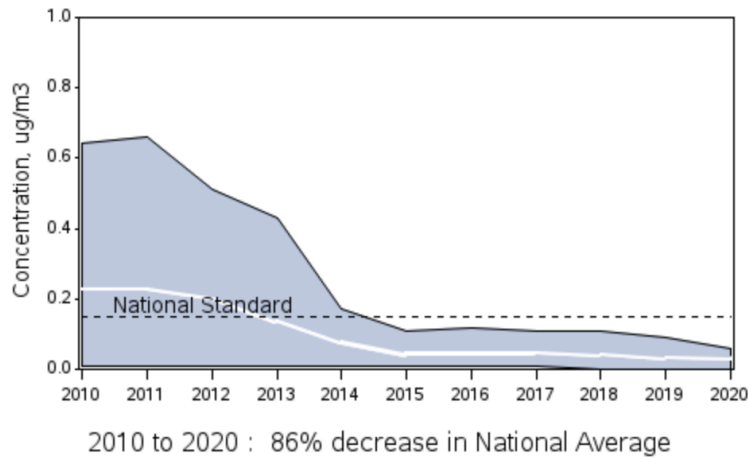
Significant improvements with other pollutants were observed with a 64% reduction for nitrogen oxides, 86% for lead and 81% for carbon monoxide.

**NO2 Air Quality, 1980 - 2020**  
 (Annual 98th Percentile of Daily Max 1-Hour Average)  
 National Trend based on 20 Sites

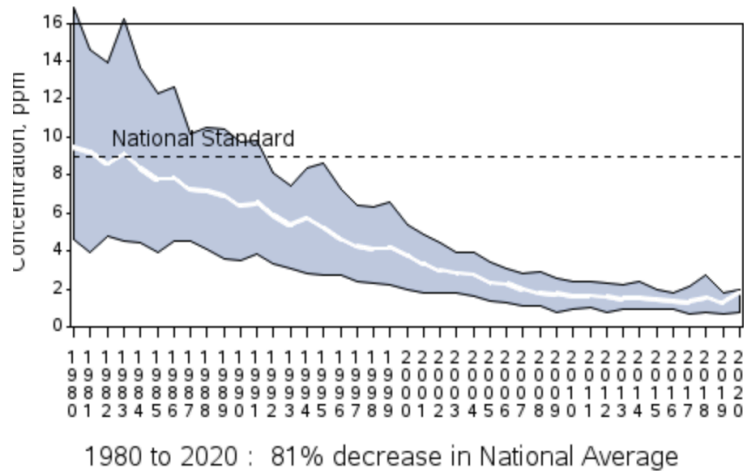


1980 to 2020 : 64% decrease in National Average

**Lead Air Quality, 2010 - 2020**  
 (Annual Maximum 3-Month Average)  
 National Trend based on 83 Sites

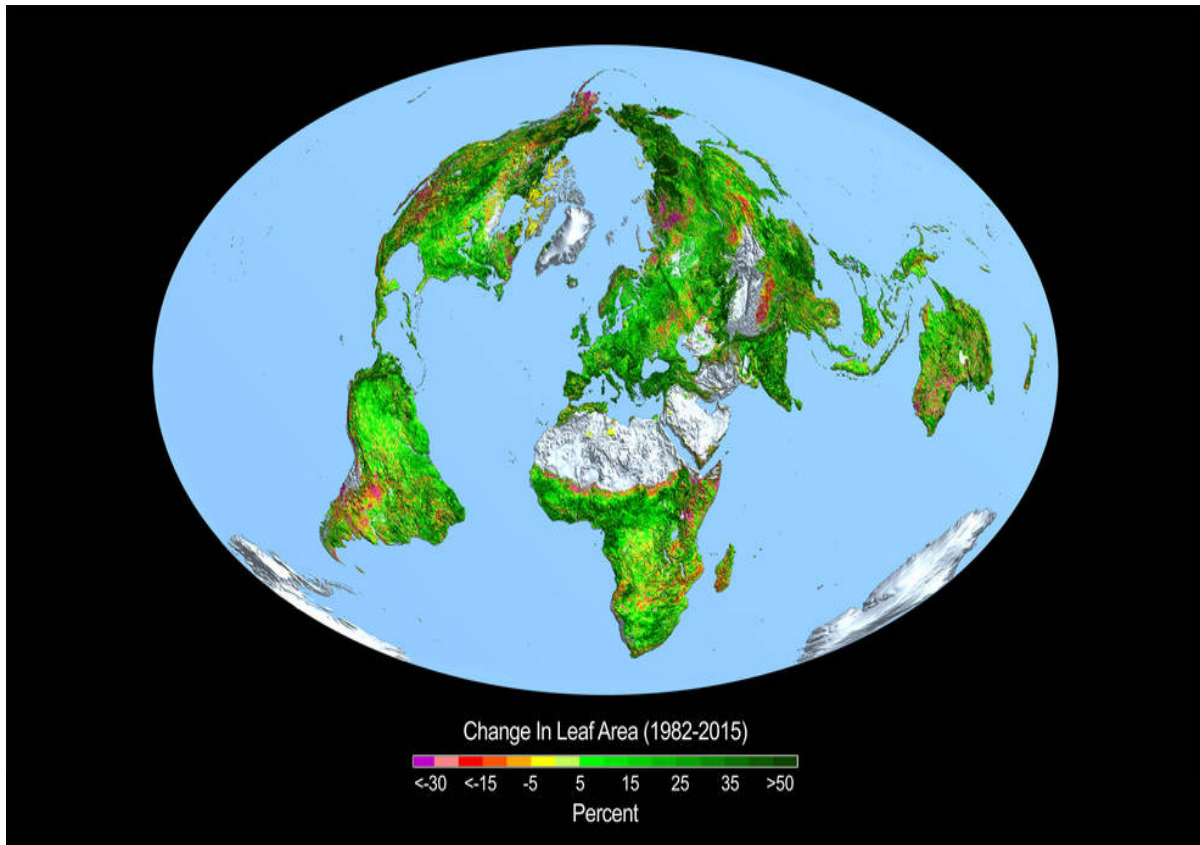


**CO Air Quality, 1980 - 2020**  
 (Annual 2nd Maximum 8-hour Average)  
 National Trend based on 36 Sites



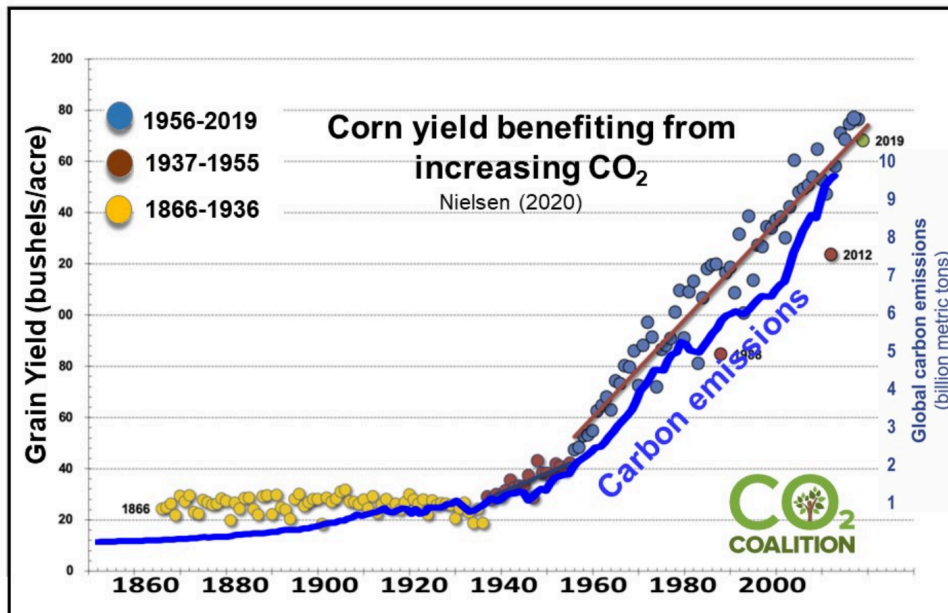
**CARBON DIOXIDE THE GAS OF LIFE**

Note that carbon dioxide is not listed as a criteria pollutant. It is essential for all plant life. We breathe in 400ppm CO<sub>2</sub> and breathe out 40,000 ppm. It is pumped into greenhouses. A greening of the planet has occurred as a result of the increases the last century. The Sahara desert has shrunk by 8%!

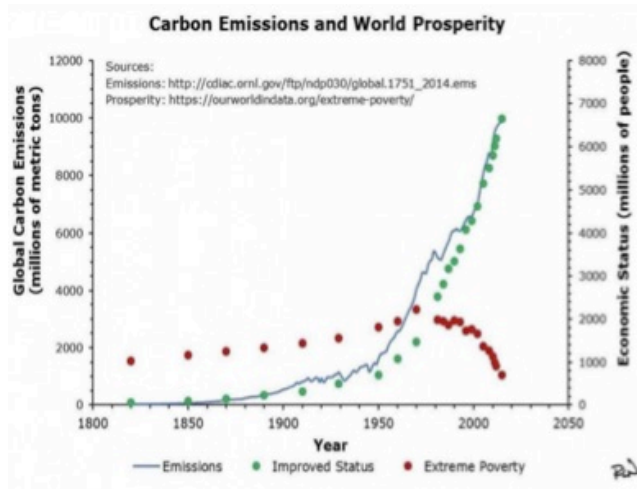


This image shows the change in leaf area across the globe from 1982-2015.  
*Credits: Boston University/R. Myneni*

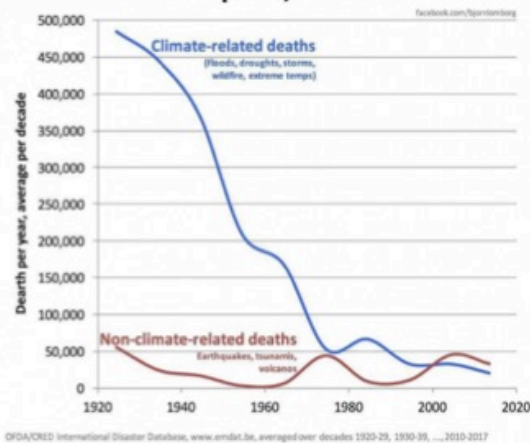
Carbon Dioxide has blessed the world with increased food.



The use of fossil fuels to help regulate heat and cold, has led to greater prosperity and reduced poverty. Deaths from weather extremes have declined since 1920.



**Deaths from Climate and non-Climate Catastrophes, 1920-2017**



By the way, perversely, when families can't afford to pay for the energy (heating oil, gas or electricity) to heat their homes in winter as will be the case with the forced change to unreliable wind and solar, they revert to burning wood. This introduces the particulate matter and other 'pollutants' we have worked so hard to remove at the source.



AUTHORS:

**George Wolff**

Dr. George T. Wolff

Atmospheric Scientist

Former Chair EPA's Clean Air Scientific Advisory Committee

Ph.D., Environmental Sciences, Rutgers University

M.S., Meteorology, New York University

B.S., Chemical Engineering, New Jersey Institute of Technology

**John Dale Dunn**

John Dale Dunn, M.D., J.D., is an emergency physician in Brownwood, Texas.

He is board-certified in emergency medicine and legal medicine and has been an inactive attorney for 35 years.

He has conducted research, scholarship, and advocacy on environmental science and policy issues for 25 years.

Areas of professional and scholarly interest include human toxicology and epidemiology, scientific legal evidentiary issues, ethics, and research methodology.

## **Joseph D'Aleo**

BS, MS degrees in Meteorology, University of Wisconsin

ABD Atmospheric Chemistry NYU,

Honorary PhD Vermont State Colleges

Professor and Meteorology Department Chair, Lyndon State College

Certified Consultant Meteorologist, Fellow of the AMS, Councilor at the AMS,

Chair of the AMS Committee on Weather Analysis and Forecasting

Co- founder and Chief Meteorologist at The Weather Channel

Chief Meteorologist at WSI, Hudson Seven LLC, WeatherBell Analytics LLC,  
Icecap