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Global warming is caused by ozone depletion, not greenhouse gases

The ozone layer, more than 12 miles up in the atmosphere, is formed and heated by high-energy, ultraviolet radiation from the Sun. When the amount of ozone is reduced (depleted), more of this sun-burning, cancer-causing radiation reaches Earth, cooling the ozone layer and warming Earth. This ultraviolet energy is 48 times hotter, 48 times more energetic that infrared radiation absorbed by greenhouse gases.

“There simply is not enough thermal energy absorbed by greenhouse gases to have much effect on global temperatures,” explains Dr. Peter L. Ward, a geophysicist and program leader who retired after 27 years working with the United States Geological Survey.

Energy absorbed by greenhouse gases has customarily been overestimated by scientists assuming light travels through space as waves, where energy is proportional to the amplitude of the wave squared. But waves result from deformation of the chemical bonds that hold matter together. There is no matter in space and there are no chemical bonds. Electromagnetic radiation, including visible light, travels through space simply as frequency, just as radio signals are transmitted. The thermal energy contained in this thermal radiation is directly proportional to its frequency: higher frequency means higher energy.

Ozone depletion began increasing in the early 1970s caused by increasing use of human-manufactured chlorofluorocarbons (CFCs). CFCs, at that time, were becoming widely used as refrigerants, solvents, and spray-can propellants. When these gases reach the ozone layer, they are broken down by ultraviolet radiation, releasing chlorine atoms that deplete ozone. Global temperatures began to rise.

Concern over the growing Antarctic Ozone Hole led to the Montreal Protocol, effective in 1989, agreeing to reduce CFC emissions. CFC concentrations began decreasing by 1993, stopping the increase in ozone depletion by 1995, and stopping the increase in temperatures in 1998. Global temperatures have not risen for the last 16 years even though greenhouse-gas emissions continue to climb.

Ozone is also depleted by volcanic eruptions emitting chlorine and bromine. Effusive, basaltic volcanic eruptions, typical in Hawaii and Iceland, cause global warming. Explosive volcanoes, on the other hand, such as the eruption of Mt. Pinatubo in the Philippines in 1991, cause early warming but net cooling because they eject megatons of sulfur dioxide and water just below the ozone layer, forming a mist or aerosol that reflects and scatters sunlight, cooling Earth for about three years.

Climate throughout geologic time appears to be controlled primarily by the duration of effusive volcanoes causing warming and the frequency of explosive volcanoes causing cummulative cooling.

“Because global warming is caused by ozone depletion,” Ward says, “reducing carbon dioxide emissions is unlikely to have any significant effect on reducing global warming.”

More detail is found in a 58-minute video at **tinyurl.com/ozone-depletion-theory** and at the website ozonedepletiontheory.info

A more detailed press release:

Global warming is caused by ozone depletion, not greenhouse gases

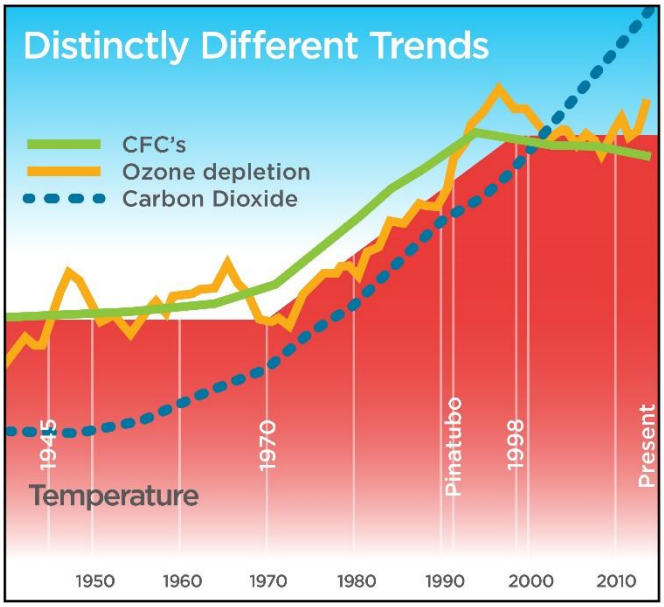
The ozone layer, 12 to 19 miles above Earth, warms the lower stratosphere by absorbing the highest-energy solar radiation that penetrates through the upper atmosphere to these altitudes. When the amount of ozone is depleted, more of this high-energy radiation is observed to reach Earth, cooling the stratosphere and warming Earth. This ultraviolet radiation increases the risk of sunburn and skin cancer. It is 48 times more energetic, 48 times hotter, than infrared radiation absorbed by greenhouse gases.

Energy absorbed by greenhouse gases has customarily been calculated assuming light travels through space as waves, where energy is proportional to the amplitude of the wave squared. But waves result from deformation of the chemical bonds that hold matter together. There is no matter in space and there are no chemical bonds. Electromagnetic radiation, which includes visible light, travels through space simply as frequency, just as radios transmit their signal. The thermal energy contained in this thermal radiation equals its frequency times the Planck constant. Such radiation usually contains a wide range of frequencies that do not interact with each other, as we all observe when looking at a rainbow.

Physicists and climatologists, by thinking in terms of waves, currently overestimate the energy involved with greenhouse gases. “There simply is not enough thermal energy absorbed by greenhouse gases to have much effect on global temperatures,” explains Dr. Peter L. Ward, a geophysicist and program leader who retired after 27 years working with the United States Geological Survey.

Ward concludes that “because global warming is caused by ozone depletion, reducing emissions of carbon dioxide and other greenhouse gases is unlikely to have any significant effect on reducing global warming.”

Mean global surface temperatures remained relatively constant from 1945 to 1970, increased rapidly from 1970 to 1998, and have remained essentially constant for the past 16 years. This angular trend is distinctly different from the continuous increase in carbon dioxide concentrations since 1945 at ever increasing rates.



CFCs, resulting ozone depletion, and resulting mean global surface temperatures increase from 1970 to 1998 but are otherwise relatively constant. Carbon dioxide, on the other hand, simply increases since 1945 at ever increasing rates. Note the increase in ozone depletion following the explosive eruption of Pinatubo in 1991, the largest volcanic eruption since 1912.

Global warming predicted by climate models has not occurred since 1998. Dozens of scientific papers have tried to explain this lack of warming in terms of natural variations of the climate system. But after 16 years of no significant warming, it is becoming increasingly difficult to explain observed temperatures based on greenhouse-gas theory.

Ozone depletion theory provides a much more logical explanation based on very clear observations.

In the late 1960s, chlorofluorocarbons (CFCs) were manufactured in increasing amounts for use as refrigerants, solvents, and spray-can propellants. Beginning in 1973, scientists discovered that CFCs cause depletion of the ozone layer by as much as 50% in Polar Regions and 15% at mid-latitudes.

Global concern over the growing Antarctic Ozone Hole, first discovered in 1985, led to negotiation of the Montreal Protocol On Substances That Deplete the Ozone Layer, effective January 1, 1989. By 1993, CFC emissions stopped increasing and began decreasing slowly. By 1996, ozone depletion stopped increasing and began decreasing very slowly. By 1998, temperatures stopped increasing and have remained essentially constant for the last 16 years.

The increase in CFC emissions increased ozone depletion, which increased temperatures. The decrease in CFC emissions due to the Montreal Protocol stopped the increase in ozone depletion, which stopped the increase in global mean surface temperature. As long as ozone remains depleted relative to levels typical before 1970, increased ultraviolet radiation reaching Earth will continue to warm the ocean as observed today.

Ozone is also depleted by volcanic eruptions that emit megatons of chlorine and bromine gases. Effusive volcanoes, typical in Iceland and Hawaii, extrude cubic miles of basalt over long periods of time, causing long-lasting ozone depletion and global warming. Major explosive volcanoes, on the other hand, such as Mt. Pinatubo in the Philippines that erupted in 1991, also deplete ozone, but they explode megatons of sulfur dioxide and water into the lower stratosphere. These gases form a sulfuric-acid mist or aerosol whose particles grow large enough to reflect and scatter sunlight, causing a net cooling of Earth.

When major explosive volcanic eruptions occur every decade or so for centuries, they can cool the world into an ice age. When effusive, basaltic volcanoes erupt relatively continuously, as they did in Iceland from 11,750 to 9,350 years ago, they deplete ozone long enough to warm the world out of an ice age. Climate, throughout geologic time, is a delicate balance between the rate of major explosive volcanic eruptions and the duration of effusive, basaltic volcanic eruptions. This balance is controlled by plate tectonics, the way large plates making up Earth's surface move.

These new insights into ozone depletion and global warming were developed by Dr. Peter L. Ward who studied his first active volcano in 1963. Scientists have known for centuries that major explosive volcanoes cause global cooling for a few years. When, eight years ago, Ward discovered clear evidence that some types of volcanoes appear to warm the world, he set out, at an intensity only possible in retirement, to understand what thermal energy is and how it flows through the atmosphere.

"Science has a history", Ward explains. "Each generation of scientists builds on what they believe has already been proven. Maxwell's equations for electromagnetic fields, developed in the 1860s, have been the cornerstone for designing every piece of electronics on which we now depend. But their application to waves in space was seriously questioned in the late 19th century and was never resolved as physicists transferred their main attention to modern quantum physics."

"Greenhouse-gas theory became popular in 1859 when John Tyndall showed in the laboratory that carbon dioxide absorbs infrared radiation", explains Ward. "But it should be possible to measure precisely in the laboratory how much the temperature of the atmosphere is increased by this absorbed energy. The only direct measurement reported in the literature was in 1900 by Knut Ångström, a famous

radiation physicist. He showed that such absorption had little to no effect on the temperature of the gas. Physicists lost interest in greenhouse-gas theory."

Thirty-eight years later, the discredited greenhouse-gas theory was resurrected by a steam engineer and in the 1960s by geochemists. While spectral physicists have continued to study absorption in very precise detail, no one has shown that such absorption actually results in a significant warming of air in the atmosphere.

"The scientific foundation for greenhouse-gas theory is not solid", Ward explains. "But it has reached prominence quantitatively because most physicists and climatologists are still convinced that radiation travels through space in the form of waves. This is impossible. We need to face the reality that reducing emissions of carbon dioxide, methane, and other greenhouse gases is unlikely to have any significant effect on global warming. Major warming predicted by current climate models for the future is highly unlikely."

"The time has come to work together on climate change, finding the best ways to limit ozone depletion, to reduce pollution, and to keep energy costs low to power a developing world."

The science behind these conclusions is explained in detail at the website ozonedepletiontheory.info. A more detailed summary is available at ozonedepletiontheory.info/summary.pdf. A 58-minute YouTube video explaining the science is available at **tinyurl.com/ozone-depletion-theory**.

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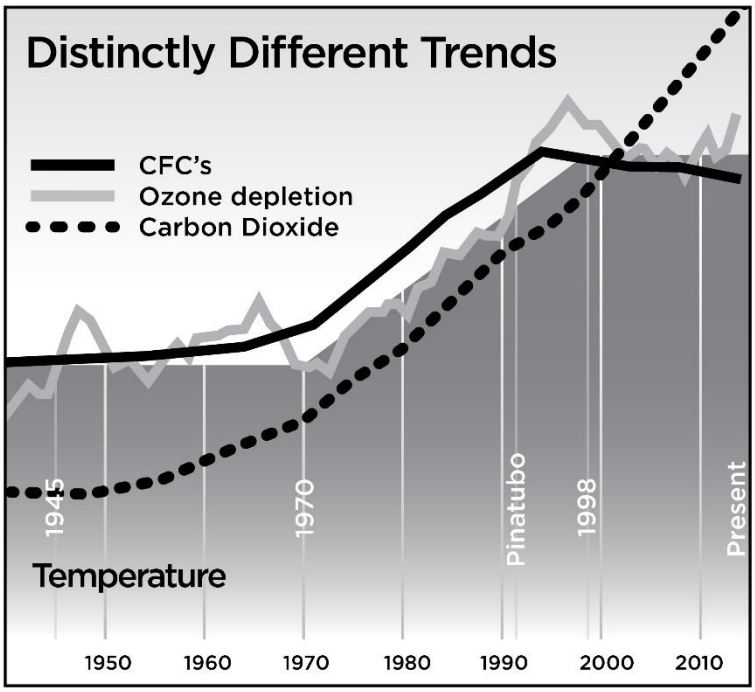
Peter L. Ward received a BA from Dartmouth College and a PhD from Columbia University. He worked 27 years as a geophysicist and program leader for the U.S. Geological Survey. He is lead author of more than 50 scientific papers, won two national awards for public education about scientific issues, has testified twice before Congress, and has chaired a working group under the Office of Science and Technology Policy.

A black and white version of the figure:



Abbreviated release send over Globe Newswire

Global warming is caused by ozone depletion, not greenhouse gases

JACKSON, Wyo., Nov. 18, 2014 (GLOBE NEWSWIRE) -- Reducing carbon dioxide emissions, as urged by the Intergovernmental Panel on Climate Change (IPCC) and others, is likely to cause major increases in the cost of energy. Yet our economy is driven by an ample supply of inexpensive energy.

Global mean temperatures rose about one degree Fahrenheit between 1970 and 1998, but have remained constant for the past 16 years. Meanwhile carbon dioxide emissions have risen briskly, suggesting they do not control temperature.

In the late 1960s, human-manufactured chlorofluorocarbons (CFCs) became widely used as refrigerants, solvents, and spray-can propellants. Temperatures began to rise. In 1974, scientists concluded that CFCs deplete the ozone layer. With discovery of the Antarctic Ozone Hole in 1985, scientists and politicians worked together to formulate the Montreal Protocol on Substances that Deplete the Ozone Layer, effective in 1989. Under this protocol, emissions of CFCs began to decrease slowly by 1993, ozone depletion began to decrease very slowly by 1995, and global temperatures have remained constant since 1998.

The ozone layer, more than 12 miles up in the atmosphere, is formed and destroyed constantly by very high-energy ultraviolet radiation from the sun. When ozone is reduced (depleted), more of this sun-burning, cancer-causing radiation reaches Earth, cooling the ozone layer and warming Earth. This ultraviolet energy is 48 times hotter, 48 times more energetic that infrared radiation absorbed by greenhouse gases.

“There simply is not enough thermal energy absorbed by greenhouse gases to have much effect on global temperatures,” explains Dr. Peter L. Ward, a geophysicist and program leader who retired after 27 years working with the United States Geological Survey. “Ozone depletion theory explains observed temperatures far more clearly than greenhouse-gas theory.”

Ozone is also depleted by volcanic eruptions emitting chlorine and bromine. Effusive, basaltic volcanic eruptions, typical in Hawaii and Iceland, cause global warming. Explosive volcanoes, on the other hand, such as the eruption of Mt. Pinatubo in the Philippines in 1991, cause early warming but net cooling because they eject megatons of sulfur dioxide and water just below the ozone layer, forming a mist or aerosol that reflects and scatters sunlight, cooling Earth for about three years.

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