



# DOSES OF REALITY

## The antidote to your misconceptions



FRIDAY, AUGUST 7, 2009

### More Global Warming Nonsense

**This article** boggles the mind. The plan is to create artificial clouds to block more of the sun. Since global temperature is controlled by the sun, this almost makes sense. However, the article never acknowledges this. Rather, it argues both that particles/gases in the atmosphere would decrease the temperature and also that we should still worry about reducing particles/gases if they come from your car. Which is it? !?

POSTED BY PHILIP AT 10:04 AM

LABELS: GLOBAL WARMING

#### 5 COMMENTS:

**Sarah and Maggie** said...



I would like to address your comment: "Rather, it argues both that particles/gases in the atmosphere would decrease the temperature and also that we should still worry about reducing particles/gases if they come from your car. Which is it?!?"

I am an astronomer and study climate on planets and would like to try to answer your question. It can be resolved simply by understanding a bit more of the details of the greenhouse effect. Clouds are made of water droplets, and do scatter sunlight and contribute to our Albedo (the amount of energy from the Sun that is reflected before reaching the Earth). Greenhouse gases in the atmosphere (not droplets) let in visible light and trap re-emitted infrared heat from the earth. If Earth had no atmosphere, the average temperature would be very cold, around -19 deg Celsius. This can be calculated by balancing the incoming flux (energy) from the Sun by the outgoing flux, which is emitted in by infrared (thermal) radiation.

#### FEED YOUR MIND



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While some families stand by this time-tested guideline for polite dinnertime conversation, we absolutely do not. We found (and still find) the dinner table a place for discussion of the most controversial topics imaginable. This blog is simply an extension of that rich experience. We invite you to join our civil, but probing, discourse. TUMS not included...

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**Stephen's Blog Policy:** Blog posts will be sparse until someone triggers one of my pet issues. When that happens, look out!

**Karen's Blog Policy:** *Answer not a fool according to his folly, lest thou also be like unto him.* - Proverbs 26:4

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Because of our atmosphere, the average temperature of Earth is much warmer, around 15 degrees Celsius. So greenhouse gases are not bad in and among themselves. You are right, the Sun is the largest contributor to global climate, it accounts for 255 degrees of warming. BUT, greenhouse gases compose of that very important 33-34 degrees of warming that keeps us above freezing. So greenhouse gases are very important, but have negative consequences in excess.

Water vapor/humidity (not just clouds) in the atmosphere is the biggest greenhouse gas, followed by carbon dioxide and methane. Thus, injecting clouds in the atmosphere will increase the Albedo (amount of energy from the Sun that is reflected) of Earth will increase, and thus cool the planet. There is a good video by NOVA called, "Global Dimming" which goes into this. Adding more greenhouse gases, such as CO2 from driving your car, absolutely will warm the planet and contribute to global warming.

Therefore to stop global warming, we should have to do a combination of reducing emissions and environmental engineering (to reverse the effect we have already caused). Thus yes, it makes logical sense to stop driving your car so much and to look at possible geoengineering solutions at the same time for the most economical solution.

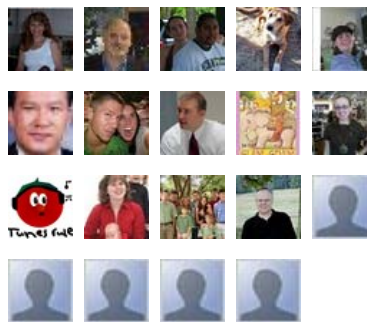
Why should we care?

Global warming is a serious issue, even for just a 1 degree rise of temperature. Melting of the Greenland Ice Sheet is very worrisome as it most definitely will cause a rise in sea level, up to 7 meters. By some estimates, 1 meter rise in sea level is almost inevitable at this time. Consider, then, that 25% of the world's fertile growing regions are within 1 meter of sea level. Preventing 25% of our loss of food will take a huge effort and amount of money.

I hope this clarifies some of your questions. I come from a very conservative background in Montana, and notice that most people who are against global warming, are only against it because it's "the conservative thing to do" not because of any real understanding of the science behind the issue. Scientific literacy should be a concern for every voting American in making decisions on such issues. The main logical fallacy in your post is that all particles/gases are not equal in their effects on climate. Especially since particles often cool the planet (such as pollution or clouds) and gases often warm the planet (such as CO2 or water vapor).

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NOVEMBER 6, 2009 1:48 PM

Philip said...



Thanks for your comment. You seem to know quite a bit about climate science (certainly much more than me). What do you make of the negative correlation between temperature and CO2 over the last 10/50/100/500 years as opposed to the positive correlation between temperature and solar activity over the same time?

I don't doubt that our climate changes and cycles. What I disagree with is the idea that people have anything much to do with it. Volcanos and the gas expelled by cows would surely register a larger (albeit tiny) effect.

Your worst-case scenario has us spending lots of effort and money to compensate for food shortages. Have you looked at pending climate legislation? The cost to "fix" the problem will cost just as much, if not more, effort and money. And if you like ethanol, we get food shortages on top of it!

I don't want to see our planet destroyed, but I also don't believe we could do that if we wanted to. And I certainly don't want to see our economy and standard of living destroyed based on misinterpreted science.

NOVEMBER 7, 2009 12:11 AM

Sarah and Maggie said...



I would first like to ask you, why (philosophically) are you opposed to the idea that humans are influencing climate. Isn't it possible that with our technological advances we are having a far greater impact on the Earth than before the industrial revolution? Also you admit you don't really understand the science behind the issue, however you claim the science is bad or misinterpreted. Upon what basis?

Next, what is your source for the statement: "of the negative correlation between temperature and CO2 over the last 10/50/100/500 years as opposed to the positive correlation between temperature and solar activity over the same time?"

First, the solar activity is an 11 year cycle, so this is really unrelated to warming trends over longer time periods. Secondly, there is a positive correlation between CO2 and temperature -- it's a greenhouse gas. Physics and chemistry explain it quite well.

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- [Principled Discovery](#)
- [RealClearPolitics](#)
- [Red State](#)
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Pre-industrial revolution levels of CO2 were around 285ppm (as measured from ice cores and since the 1960s directly in the atmosphere:

[http://en.wikipedia.org/wiki/File:Mauna\\_Loa\\_Carbon\\_Dioxide-en.svg](http://en.wikipedia.org/wiki/File:Mauna_Loa_Carbon_Dioxide-en.svg)) Now the level is pushing 384ppm. That is a substantial relative increase of around 35%. The volcanic output of greenhouse gases has, on average, been constant on human timescales.

Secondly, there is a lag time effect of CO2 emissions and final CO2 concentration. In essence due to the residence time or "turnover time" of CO2, even if we were to suddenly stop ALL emission of CO2 into the atmosphere, we would still measure an increase CO2 levels in the atmosphere for the next 150 years before it reached a steady state (leveled out).

On geological timescales (~400,000 yrs), yes the Earth does regulate climate. Solar luminosity (energy flux) has increased steadily since the formation of Earth yet the climate has been relatively constant. This is due to the Carbon-Silicate cycle which is controlled by biology and geology. So yes, in 400,000 the Earth should resolve whatever damage we cause now. But are you willing to wait that long? We need to do something now, as this issue will directly affect our children and grandchildren.

Finally, my worst case scenario is not about money, it's about massive famines and millions of people dying. Do you think the wealthy nations (after causing a large part of this problem) are really going to help prevent the loss of agricultural land in poorer nations? How much do you monetary value do you put on each human life if dealing with the problem later is supposedly less expensive that reducing emissions?

I don't believe our planet will be "destroyed" just that we are not being the best stewards of the resources and Earth God gave us. And we are causing ourselves undo harm. Ironically, the environmental movement was originally Republican and from Biblical teachings, I'd expect Christians to be the most staunch supporters of being "green". Materialism (which is a huge part of the Global Warming issue ) is sure not on Jesus' priority list.

**NOVEMBER 7, 2009 1:09 AM**

**Sarah and Maggie said...**



I would also like to mention that before I really understood more about climate science, I was also skeptical of Global Warming. Since it's become so politically charged, it's difficult

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### YOUR BLOGGERS



**Philip**



**Stephen**



to look at unbiased reports on it and everyone and their mother has their own opinion supposedly backed by "science". Climate is a very complex system, and there are many unresolved questions, such as the amount of predicted warming, the rate the ice sheets will melt etc. But there are a few things that remain sure 1) carbon dioxide is a greenhouse gas. It has in the past, it does so now, and it will warm the Earth and 2) human activity has added substantially to the carbon concentration since the industrial revolution. This is independent from volcanic activity or other non-human sources.

NOVEMBER 7, 2009 1:32 AM

Philip said...



See [HERE](#) for further discussion.

NOVEMBER 10, 2009 11:08 AM

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# DOSES OF REALITY

## The antidote to your misconceptions



TUESDAY, NOVEMBER 10, 2009

### October Was the Third Coldest On Record

Today we get yet another strange **bit of data** for the global warming crowd. This gives me an opportunity to address a related issue.

Recently, a few of my global warming-related posts attracted some negative comments from an astronomer who studies climate on a planetary scale. These can be read [here](#). Some of the highlights are as follows:

*"Global warming is a serious issue, even for just a 1 degree rise of temperature. Melting of the Greenland Ice Sheet is very worrisome as it most definitely will cause a rise in sea level, up to 7 meters. By some estimates, 1 meter rise in sea level is almost inevitable at this time. Consider, then, that 25% of the world's fertile growing regions are within 1 meter of sea level. Preventing 25% of our loss of food will take a huge effort and amount of money."*

*"On geological timescales (~400,000 yrs), yes the Earth does regulate climate. Solar luminosity (energy flux) has increased steadily since the formation of Earth yet the climate has been relatively constant. This is due to the Carbon-Silicate cycle which is controlled by biology and geology. So yes, in 400,000 the Earth should resolve whatever damage we cause now. But are you willing to wait that long? We need to do something now, as this issue will directly affect our children and grandchildren."*

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*it's become so politically charged, it's difficult to look at unbiased reports on it and everyone and their mother has their own opinion supposedly backed by 'science'. Climate is a very complex system, and there are many unresolved questions, such as the amount of predicted warming, the rate the ice sheets will melt etc. But there are a few things that remain sure 1) carbon dioxide is a greenhouse gas. It has in the past, it does so now, and it will warm the Earth and 2) human activity has added substantially to the carbon concentration since the industrial revolution. This is independent from volcanic activity or other non-human sources."*

I have not included every argument here, but this makes a good jumping off point for a more public (front page) discussion. Again, I am forced to admit that I am not a scientist and have limited knowledge of climatology theory and research. As such, I depend on others to stay informed on the important and timely issue of global warming. The following sources are representative of those that have influenced my understanding of the science at hand:

[Roy Spencer's website and blog](#) - Spencer is a climatologist at the University of Alabama at Huntsville and the official climatologist for Rush Limbaugh. He is the author of *Climate Confusion*.

[The Hockey Stick: A New Low in Climate Science by John L. Daly](#) - This is a thorough debunking of a chart made famous by Al Gore's venture into climate cinema.

[The Great Global Warming Swindle](#) - This documentary features quite a few scientists who doubt humanity's responsibility for global warming and discuss some of the non-science-related interests pushing the "conventional" view.

I will end this post by stating that, as a Christian, I am also opposed to the wholesale degradation of the earth with which God has entrusted us. I am also more than a little wary of the rampant materialism that seems to be choking our culture. However, I see the theory of man-made global warming as just another attempt by the left, making full use of alarmist scare-tactics, to usurp the rights and freedom of individuals and add yet more power to an ever-increasing government bureaucracy. I oppose materialism on a personal level; I do not wish to see our modern economy to collapse under the weight of arbitrary and onerous carbon limits and regulations. I also do not want our country to cede its sovereignty to the U.N. or any other world entity.

The environmental movement has produced very little of worth to our country, specifically, or to humanity at large. It has all but halted our ability to extract and refine fossil fuels, the life-blood of a modern standard of living. It has committed unspeakable harm to the third

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world by causing DDT to be banned. Malaria has killed millions since this dubious environmental "victory". Time and again, environmental regulations are used to punish one group while advancing the interests of others. They have kept the developing nations in their place, refusing them the basic tools of modernity, all the while propagating a false sense of guilt to further their aims. From celebrities who decry carbon footprints while flying their private jets to federal regulators blocking any attempt to become energy independent and punishing what little profits are made by energy producers, I simply don't have any confidence in them whatsoever. I believe man-made global warming is a terrible lie designed to destroy our economy and our place as the world's most powerful nation.

POSTED BY PHILIP AT 10:05 AM 

LABELS: [GLOBAL WARMING](#)

## 5 COMMENTS:

[Sarah and Maggie](#) said...



Hi Phil,

For those of you who didn't read my posts on the previous entry to this blog, I am the astronomer to which he referred. I encourage anyone to read the actual post as though Phil did a fair job in summarizing my words, it is always best to read everything in context.

I don't have a lot of time this moment as I have a meeting in 30 min, but I did want to point anyone interested in learning about global warming from a scientific perspective to [www.realclimate.org](http://www.realclimate.org). This blog is moderated and run by active climate scientists. They write everything in a very accessible format, and provide links to more in depth articles should you want to learn more.

RealClimate.org for example goes through the hockey stick controversy:

<http://www.realclimate.org/index.php/archives/2004/12/myths-vs-fact-regarding-the-hockey-stick/>

<http://www.realclimate.org/index.php/archives/2005/02/dummies-guide-to-the-latest-hockey-stick-controversy/>

They provide a great introduction to climate in general in their "start here" section:

- [Mark Steyn](#)
- [Michelle Malkin](#)
- [National Review Online](#)
- [Principled Discovery](#)
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<http://www.realclimate.org/index.php/archives/2007/05/start-here/>

Also you mentioned the Great Global Warming Swindle, which I watched several years ago when it first came out. After watching it, I looked more into it and found some fallacies they presented. I don't remember where I originally searched, but the magazine New Scientist has some articles on it and some of the fallacies appear to be written in someone else's blog (obviously one should trust the science magazine over a blog, but I think that's where he got his information but again, I haven't looked at this recently):

<http://kalimna.blogspot.com/2007/03/rebutting-errors-in-great-global.html>

<http://www.newscientist.com/blog/environment/2007/03/climate-change-who-is-swindling-who.html>

<http://www.newscientist.com/article/mg19325955.900-fake-fights-are-not-helping-climate-science.html>

Also I'd like to refer to the title of this blog for today in that warming effects are not uniform across the globe, and just because there is cold days/months does in no way debunk a general warming trend.

And I would like to thank Phil again for your comments, which have always been respectful and fair.

**NOVEMBER 10, 2009 1:54 PM**

**Philip** said...



I think I might continue the discussion by asking a question or two.

I just read an interesting article [HERE](#) about how excess CO2 is absorbed into the oceans. What do you think about this?

Also, another blog mentioned that the graph charting increasing CO2 levels is always from the weather station in Hawaii. Do CO2 levels vary across the globe like temperature?

**NOVEMBER 10, 2009 11:30 PM**

**Sarah and Maggie** said...



Hi Phil,  
Sorry it's taken me a while to get to this as I had a family emergency a few days ago. But here are the answers to your

► 2007 (151)

YOUR BLOGGERS



**Philip**



**Stephen**



questions.

## 1. Excess CO<sub>2</sub> absorbed by oceans.

The article you linked actually has the answer to your first question, so I'll just copy the relevant section:

Since CO<sub>2</sub> is an acid gas, the uptake of anthropogenic CO<sub>2</sub> uses up carbonate ions and lowers the oceanic pH. The carbonate ion concentration of surface sea water will decrease by an estimated 30 percent with a doubling of CO<sub>2</sub> has the potential to take up approximately 85 percent of the anthropogenic CO<sub>2</sub> that is released to the atmosphere. As long as atmospheric CO<sub>2</sub> concentrations continue to rise, the oceans will continue to take up CO<sub>2</sub>. However, this reaction is reversible. If atmospheric CO<sub>2</sub> were to decrease in the future, the oceans will start releasing the accumulated anthropogenic CO<sub>2</sub> back out into the atmosphere.

"The ultimate storage place for anthropogenic CO<sub>2</sub> must be reactions that bind the CO<sub>2</sub> in a manner that is not easily reversed."

Essentially, the time scales are too long for our situation. Another source on the Ocean Carbon Cycle says, "The ocean absorbs CO<sub>2</sub> from the atmosphere in an attempt to reach equilibrium by direct air-to-sea exchange. This process takes place at an extremely low rate, measured in hundreds to thousands of years."

Essentially it goes back to the thing I mentioned before, on long geological time scales Earth has a great capacity to keep a temperate climate, but these time scales are longer than human ones.

Also from that blog site I mentioned, [realclimate.org](http://realclimate.org), they also go into how the ocean becomes less effective as a carbon sink as the concentrations go up in more detail.

The take home message is yes, the oceans do take up CO<sub>2</sub> but to get it to the deep ocean where it is really removed from the atmosphere is 1000 years or so. And even then, there is a limit to what the oceans can take in.

## 2. Can CO<sub>2</sub> vary across the globe?

Yes it does vary across the globe, and it also varies seasonally, as seen in the Hawaii chart. However, variations across the

globe can't account for 100ppm of concentration increase. Plus there is a global network measuring CO<sub>2</sub> concentrations and they all measure increasing CO<sub>2</sub>. NASA also has a new mission this year that will get a better estimate of global fluctuations in CO<sub>2</sub>. The poles have the highest CO<sub>2</sub> abundance, and so Hawaii is actually measuring values much less than the high end extremes. As well that atmosphere does mix fairly well on month timescales.

Another friend of mine is an atmospheric chemist, currently looking at the global fluctuations of CO<sub>2</sub> (so exactly your question). And she sent me a link to her advisor explaining their most recent results on youtube. It's only 1 min 30 secs and sums up your question nicely.

<http://www.youtube.com/watch?v=u5ivBzeNYkY>

As you can see in their figure on the video, the CO<sub>2</sub> levels fluctuate from around 380ppm to 396ppm. So yes, you are correct in that there are global fluctuations, but nothing that would account for the overall increase of over 100ppm that we measure.

NOVEMBER 14, 2009 9:59 PM

Sarah and Maggie said...



(they informed me my comment was too long so here is the 2nd part of it. :))

I hope these answers have clarified your questions about the carbon cycle. I think it's easier for people to believe that we aren't the problem, because then there is no responsibility to do anything about it. But really the evidences are very solid behind human caused global warming, and it's not really a matter of what you believe or not. It's a matter of the evidence.

Of course there are dissenting views, normally from non-climate scientists, which is good for any scientific study, as all the data must be scrutinized and combed for any other possible interpretation. However the vast majority of climate scientists agree this is a real effect that humans are causing and a real problem. And, speaking as a scientist, we aren't here to scare the population or drive politics by using bad data to achieve some end. Scientists are just curious people who want to know the truth as shown by objective evidence. I think every climate scientist wished the data for global warming weren't so bleak, but unfortunately it is.

I hope you rethink your position on this issue. As a blogger you have an strong influence and I think you can be a strong witness in the Christian community.

Best wishes,  
Sarah

NOVEMBER 14, 2009 10:00 PM

**Philip** said...



See above. Thanks for your responses.

NOVEMBER 16, 2009 10:37 AM

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