

# The Global Warming Emergency

Frank Legge, Aug 2008

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Update, Aug 2008, with reference to soot in the arctic and the “tipping point”.

We are urged to rise to the challenge of the Global Warming Emergency. The catch-cry is that the cost of immediate action, immense though it must be, will be less than the cost of neglect.

If we examine this challenge we see that it is based on a hypothesis which can be broken into three parts: **global warming is occurring, the current and predicted temperature is unusual and dangerous, and the warming is largely caused by man-made carbon dioxide.**

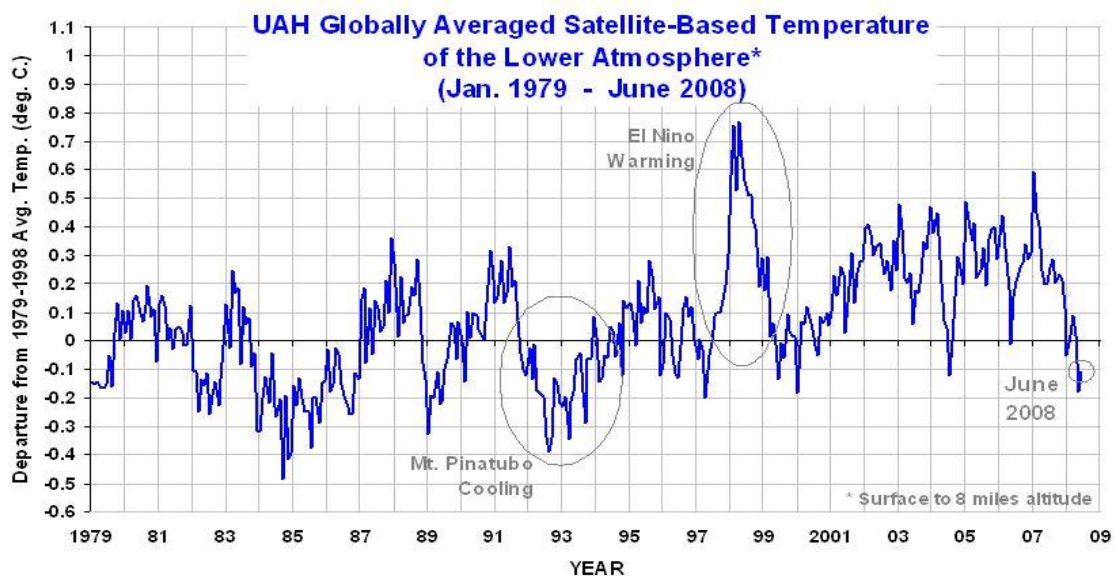
The belief that this hypothesis is correct, and that carbon dioxide (CO<sub>2</sub>) production must be reduced, has now taken hold throughout much of the world. In Australia both the government and the opposition now strongly support these three contentions and the resulting call to action. Even in America, long opposed to the Kyoto protocol, some moves are now under way in recognition of these concerns.

All three of these components are necessary to the hypothesis, so they are like links in a chain: if one link fails, the whole hypothesis fails.

We will examine these three parts, one by one, and see if they all survive scrutiny.

## 1. Global Warming

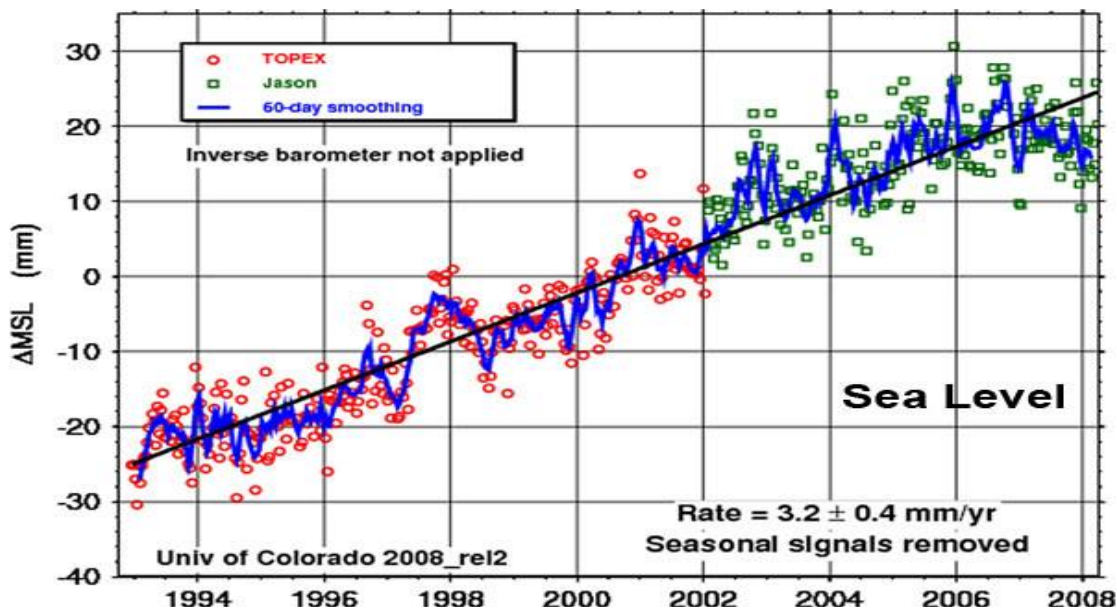
The recent warming period is giving signs of coming to an end: satellite measurements of global atmospheric temperature have been declining this decade and now show a temperature as low as in 1979, the year when the satellite measurements started, as shown in this graph.<sup>1</sup>



We see that the May 2008 temperature was the lowest since 2000, the third lowest since 1994, and the June temperature is very little higher. The size and rapidity of the temperature drop from 2007 is remarkable.

<sup>1</sup> Spencer, R.W. <http://www.weatherquestions.com/Roy-Spencer-on-global-warming.htm>

Sea level is an indicator of global warming as water expands with temperature, and the level will also rise if land-based ice melts. The level has been rising but in the last few years appears to be falling or at least to have leveled off, as shown by satellite altimetry.<sup>2</sup>



If one looks at the above graphs with a cool eye one cannot find reason to assert that temperatures are rising. Given that there is a certain randomness to the climate it appears possible that the temperature could rise or continue to fall from the present level, or simply fluctuate.

### Data accuracy

Evidence that NASA has been making unexplained upward adjustments to recent land surface temperature data has been found.<sup>3</sup> Unadjusted data shows that the temperature in the 30s was higher than at present.<sup>4</sup> There is also ongoing debate about whether proper allowance has been made for the confounding effect of urban encroachment on temperature stations.<sup>5</sup> For both these reasons the satellite data should be preferred.

## 2. Unusual and Dangerous Temperatures

There is ample evidence that the world has experienced considerable variation in temperature. The Vikings established farms in Greenland during the period now known as the Medieval Warming (950 to 1300 AD). These farms were eventually abandoned due to cold. During the Medieval Warming and the Roman Warming (200 BC to 600 AD) agricultural production in England and Europe thrived and populations grew. Before that there was the Minoan Warming, possibly the hottest of all, in which the Bronze Age arose. In the intervening cold Dark Ages and in the Little Ice Age starvation and disease caused major population declines.<sup>6</sup> It appears that humans function better when the world is at the high end of its temperature range. Farming has not been re-established in Greenland, though there are a few people trying it again, so it appears that the present temperature is not yet quite as high as during the Medieval warming.

<sup>2</sup> Sea level [http://www.eike-klima-energie.eu/wcmsmimefiles/sealevel\\_falling\\_732.pdf](http://www.eike-klima-energie.eu/wcmsmimefiles/sealevel_falling_732.pdf)

<sup>3</sup> Goddard, S. [http://www.theregister.co.uk/2008/05/02/a\\_tale\\_of\\_two\\_thermometers/page2.html](http://www.theregister.co.uk/2008/05/02/a_tale_of_two_thermometers/page2.html)

<sup>4</sup> <http://www.climate-skeptic.com/2007/11/signal-to-noise.html>

<sup>5</sup> MacKintyre, S. <http://www.climateaudit.org/>

<http://wattsupwiththat.wordpress.com/2008/04/21/this-is-why-you-dont-put-an-official-noaa-temperature-sensor-over-concrete/>

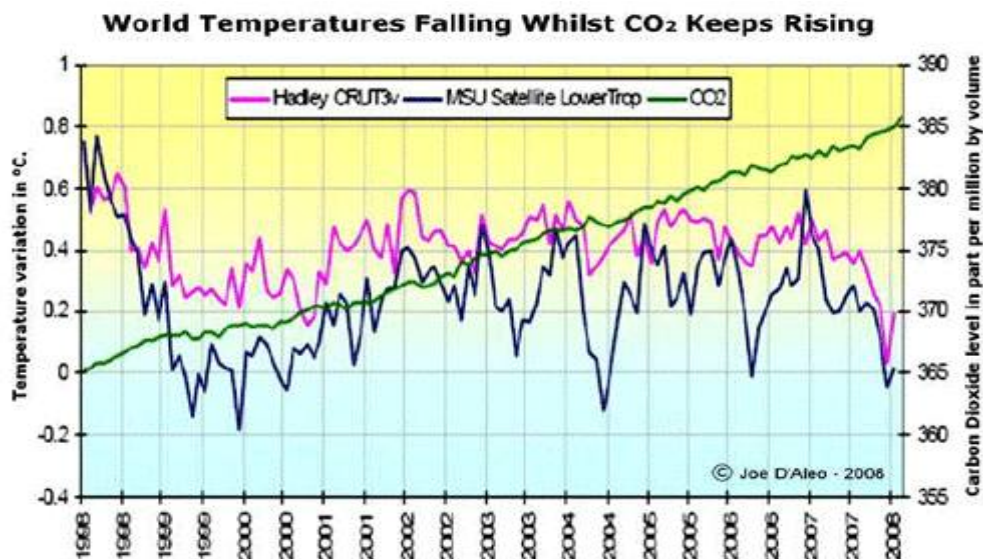
<sup>6</sup> <http://www.friesian.com/crichton.htm> [http://www2.sunysuffolk.edu/mandias/lia/little\\_ice\\_age.html](http://www2.sunysuffolk.edu/mandias/lia/little_ice_age.html)

The IPCC states that CO<sub>2</sub> levels are rising, which is certainly true, and asserts that this will cause the temperature to rise to a dangerous level on the assumption that climate is unstable. In this view there is a threshold temperature above which there will be runaway warming due to positive feedback. It seems unlikely that there will be runaway warming as it did not happen in the previous warm periods. Spencer deals with this question of climate stability by studying climate sensitivity. He finds that the sensitivity is sufficiently low that the feedback will be negative, not positive, so there will not be a critical threshold temperature.<sup>7</sup> In this view the hotter it gets the stronger will be the restoring force, which will ultimately see the temperature continue to fluctuate around the mean, as it has been doing throughout the period for which we have evidence, and presumably throughout the present interglacial. The low sensitivity found also allows Spencer to predict a man-made CO<sub>2</sub> warming of only about 0.5° C, very substantially less than the rise of about 3° C which the IPCC predicts.

It is interesting to note that the IPCC has made several predictions of the rate of warming, based on their climate computer models, all of which have proved to be too steep. Their response has been to reset their predictions to give a slower rise and later date for catastrophe.<sup>8</sup> They give no hint that their models are just hypotheses and may be wrong.

### 3. The Role of Carbon Dioxide

Many authors have considered how carbon dioxide behaves in the atmosphere. All agree that it is a greenhouse gas. All agree that it plays a minor role compared with water vapour. The differences in opinion appear when the effect of increasing the CO<sub>2</sub> level is discussed. It is not disputed that CO<sub>2</sub> has a warming effect – what is disputed is the magnitude and rate of warming. Few seem to realize that the present level is absorbing most of the absorbable wavelengths and that further additions will have diminishing, and eventually negligible, effect.<sup>9</sup> Whatever the theory, it is hard to see any correlation between the rising CO<sub>2</sub> level and temperature during the last decade.<sup>10</sup>



In a very long time scale, going back 500 million years, Rothman shows that no correlation between CO<sub>2</sub> level and climate can be discerned,<sup>11</sup> but much has been made of the high correlation between temperature and CO<sub>2</sub> level over the last 5 million years, as shown in ice

<sup>7</sup> Spencer, R.W. <http://www.weatherquestions.com/Climate-Sensitivity-Holy-Grail.htm>

<sup>8</sup> [http://www.climate-skeptic.com/climate\\_propoganda/index.html](http://www.climate-skeptic.com/climate_propoganda/index.html)

<sup>9</sup> <http://www.applet-magic.com/radiativeeff.htm>

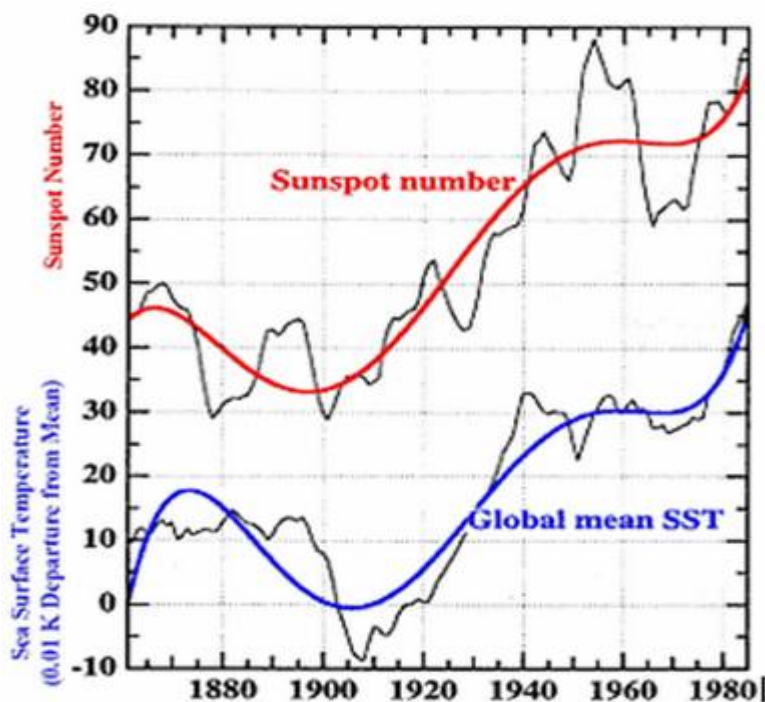
<sup>10</sup> Schreuder, H. et. al. [http://www.climate-science.org.nz/images/PDFs/ipcc\\_letter\\_14april08.pdf](http://www.climate-science.org.nz/images/PDFs/ipcc_letter_14april08.pdf)

<sup>11</sup> Rothman, D.H. <http://www.pnas.org/content/99/7/4167.full>

cores. This was a period long enough to cover several ice ages, and was a feature of the Al Gore movie, “An Inconvenient Truth”. The inconvenient fact that the temperature rises about 1000 years **before** the CO<sub>2</sub> level rises is ignored, or arguments which appear weak or circular are proposed to explain it.

Glassman provides a plausible explanation for the lag between temperature and CO<sub>2</sub> level. The solubility of CO<sub>2</sub> in the oceans reduces as temperature rises and this drives the gas off to the atmosphere, but it takes time, hence the lag. As temperature falls more CO<sub>2</sub> is absorbed by the ocean and again this takes time.<sup>12</sup> The quantity of CO<sub>2</sub> stored in the oceans is huge compared with that generated by humans so it can safely be assumed that the effect of continuing to burn fossil fuels will be minor compared with the amount passing in and out of the atmosphere due to ocean temperature changes, and negligible compared with unknown climate determining factors which have driven the earth in and out of ice ages. We should recognize that, as well as the risk of warming, there is a risk that an ice age may be approaching as we are 11,000 years into the current interglacial, and these usually last about 10,000 years.

Patterson draws on the work of Veizer and Shaviv<sup>13</sup> to provide an explanation for the way in which solar activity influences global temperature. In this view small changes in solar activity are amplified through the effect of cosmic rays on clouds.<sup>14</sup> Patterson goes on to discuss the way in which sunspot cycles are correlated with temperature and provides two handy graphs.



The graph above shows sea surface temperature and sunspot number from 1860. There is a reasonably close correlation.

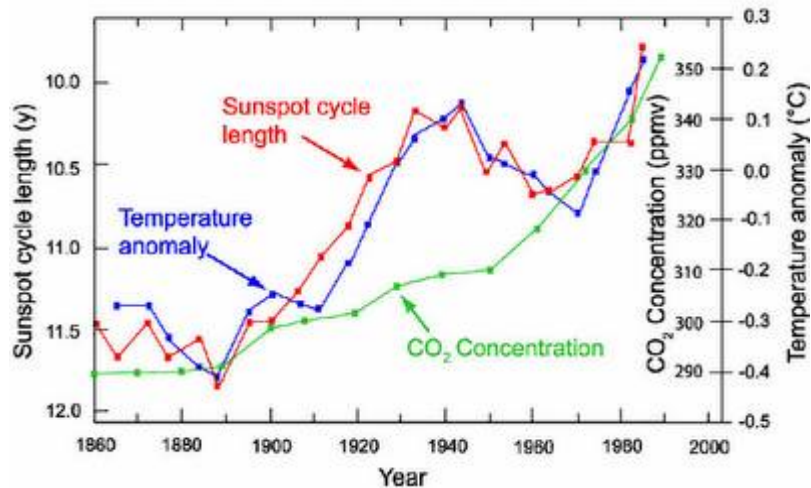
The graph below shows more recent data. It is easy to see the stark contrast between the way CO<sub>2</sub> level and sunspot activity correlate with temperature.

<sup>12</sup> Glassman, J.A. [http://www.rocketscientistsjournal.com/2006/10/co2\\_acquittal.html](http://www.rocketscientistsjournal.com/2006/10/co2_acquittal.html)

<sup>13</sup> Veizer, J & N.J. Shaviv, <http://www.gsajournals.org/archive/1052-5173/13/7/pdf/i1052-5173-13-7-4.pdf>

<sup>14</sup> Patterson, T. <http://petestx.spaces.live.com/blog/cns!C8DAB55CD5793C69!390.entry>





## The role of soot and arctic alarm

Recent estimates show that soot on ice has a warming effect three times as high as that used by the IPCC, and about 60% as influential as the CO<sub>2</sub> level.<sup>15</sup> This may explain the discrepancy between ice retention in the northern and southern hemispheres. Even the IPCC reports no loss of ice in Antarctica. It has been noted that soot has contaminated a glacier which is retreating in China. This video provides a glimpse of blackened ice and also of the smoke laden air from a city in the region.<sup>16</sup> It is clear that control of soot emission could have a significant effect on ice retention in the short term, as it is washed out of the atmosphere quickly by rain, while control of CO<sub>2</sub> production can only have an effect in the long term, as CO<sub>2</sub> has a half life of hundreds of years in the atmosphere. Control of soot would only cost a tiny fraction of the Koyoto protocol. Soot would be covered by fresh snow in winter and any reduction in output would be effective the following summer.

The ABC program “The Tipping Point” recently provided a very confident argument that the world is in danger of moving into a rapid uncontrolled warming phase due to the loss of arctic ice. They showed that the area of ice had been steadily declining and that the area of ice in 2007 had reached a record low. The argument was based on the fact that ice is the best reflector of radiation while open water is the worst. Loss of ice therefore provides a positive feedback mechanism in which it is feared that, once the area of ice drops below a certain point, total loss of ice is inevitable. The program left no doubt in the mind of the observer that this was an urgent and serious problem and that curbing production of CO<sub>2</sub> was essential. If the situation is really so dire, and that immediate action is required, the argument put forth by the “The Tipping Point” is clearly absurd – they should instead have been urging reduction in soot production for the reasons set out above, but they did not. Aerial videos clearly showed dark staining on old ice.

The success of the Chinese in reducing particulate production to clear the air for the Olympic Games shows how quickly results can be achieved when action is taken.

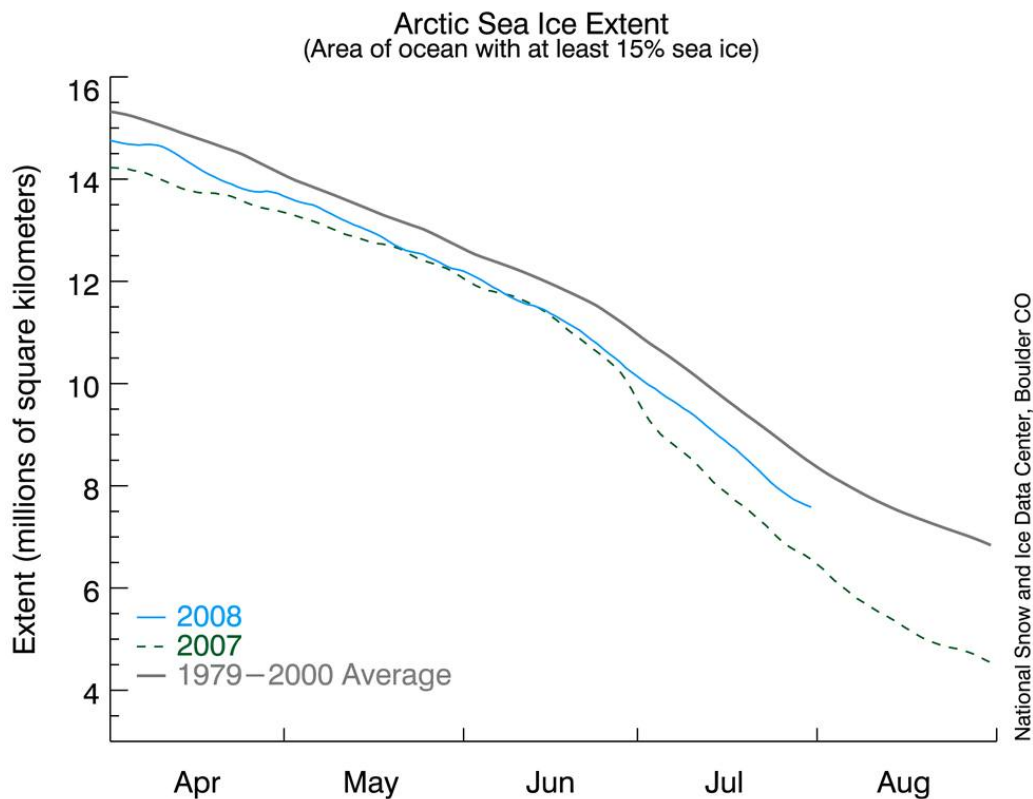
The degree of urgency of this problem appears to have been somewhat allayed by the fact that the area of ice in the arctic at the end of July this year was 29% larger than at the same time in 2007, as the graph below shows.<sup>17</sup> No doubt those who are supportive of the IPCC will say it is wrong to base arguments on one year, 2008. To this one might reply it is wrong to base arguments, and write complete alarmist television programs to the public, in which the essential point was based on one year, 2007. The graph did look alarming in May, which is no doubt

<sup>15</sup> Soot: [http://www.theregister.co.uk/2008/03/25/soot\\_solution/](http://www.theregister.co.uk/2008/03/25/soot_solution/)

<sup>16</sup> Glacier: <http://www.guardian.co.uk/environment/video/2008/jul/25/glacier.tian>

<sup>17</sup> Area of arctic sea ice: [http://nsidc.org/images/arcticseaicenews/20080801\\_Figure2.png](http://nsidc.org/images/arcticseaicenews/20080801_Figure2.png)

when the program was written, but does not look alarming now. It appears that the ABC has an obligation now to point out the misleading nature of their program and allay fears about this issue promptly.



### Who benefits?

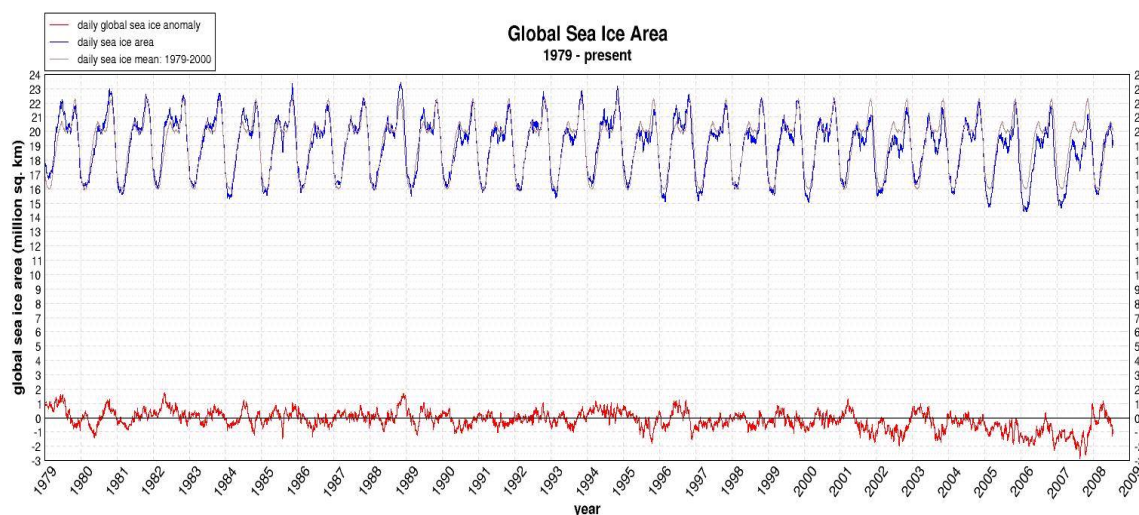
When a substantial and controversial proposal is presented it is standard practice to ask who will benefit. The nuclear power industry will be one of the main beneficiaries of a fear of global warming as it produces little CO<sub>2</sub> and can be expected to use this fact to promote expansion. If the public fear of CO<sub>2</sub> becomes greater than the fear of radioactivity there could be substantial changes in energy policy. There will also be organizations working out how to make money out of carbon credits. Could Al Gore be involved in such activity? These concepts of course prove nothing but arouse suspicion and encourage scientific investigation.

### Prediction

The IPCC temperature models, based on CO<sub>2</sub> levels, have repeatedly been shown to fail to predict temperature changes. Is there a better way to predict the climate? Archibald reminds us that sunspot activity is highly correlated with temperature, as we see above. He also shows that sunspot cycle length is even more closely correlated. There is virtually no sunspot activity at present and this quiet cycle is becoming prolonged to such an extent that he now predicts that a mini ice age is likely to occur.<sup>18</sup> He asserts that the small effect of CO<sub>2</sub> will be overwhelmed by the solar effect. He confirms that each increment of CO<sub>2</sub> will have less effect than the one before, a point which appears to have been totally ignored by the IPCC. As if to prove him right the recent temperature drop has caused the global sea ice area, previously declining, to rise briefly above the long term average.<sup>19</sup> It will be interesting to watch.

<sup>18</sup> Archibald, D. [http://www.warwickhughes.com/agri/Solar\\_Arch\\_NY\\_Mar2\\_08.pdf](http://www.warwickhughes.com/agri/Solar_Arch_NY_Mar2_08.pdf)

<sup>19</sup> <http://arctic.atmos.uiuc.edu/cryosphere/>



Easterbrook points out that the newly discovered Pacific Decadal Oscillation has flipped to a cooling mode.<sup>20</sup> With this, and the lack of sunspots, both promoting cooling it seems global warming has been postponed at least for a number of decades.

## Conclusion

While the first of the three essential links in this chain hypothesis, that global warming exists, may be inconclusive, the second, that current and predicted temperatures are unusual and dangerous, is clearly wrong. The third, that man-made carbon dioxide is largely responsible for the warming, becomes irrelevant in the light of the second, and is also wrong, as its contribution is clearly much smaller than other influences. The hypothesis therefore fails as a justification for rapid, expensive and destructive emergency action. The idea that a little warming is necessarily harmful is by no means proven, given the prosperity during the Medieval Warming.

## Postscript

### Alternatives

Before embarking on projects based on the fear of CO<sub>2</sub>, alternatives should be considered in a scientific and cautious manner. In particular the very expensive, untested, and possibly dangerous, underground, high pressure capture and storage of CO<sub>2</sub> is pure folly - the higher the CO<sub>2</sub> level in the atmosphere the better plants grow.<sup>21</sup> CO<sub>2</sub> is, after all, one of the two raw materials for photosynthesis, and horticulturalists use concentrations of CO<sub>2</sub> in greenhouses three times as high as in the atmosphere to increase plant growth. For every ton of carbon burned, four tons of CO<sub>2</sub> are produced, far too much to store where the coal came from.

It is becoming clear that nuclear power is not as cheap as once thought, and it has needed an ongoing subsidy. Is this wise policy? Would it not be better to fund research into alternative renewable energy production and energy efficiency? They appear more cost-effective.<sup>22</sup>

### The future

Nuclear energy, like coal and oil, is a finite resource, so at best it gives a breathing space before we face the world's greatest problem: rising population, combined with rising expectations, in a world of diminishing resources. While sustainable sources of energy will assist, it is difficult to see how the world can progress to a comfortable place for all unless the population is reduced. It is, after all, not only sources of energy that are in decline but also the many raw materials we use to make equipment, and for construction.

<sup>20</sup> Easterbrook: [http://junkscience.com/apr08/La\\_Nina\\_and\\_Pacific\\_Decadal\\_Oscillation\\_Cool\\_the\\_Pacific.pdf](http://junkscience.com/apr08/La_Nina_and_Pacific_Decadal_Oscillation_Cool_the_Pacific.pdf)

<sup>21</sup> <http://wattsupwiththat.wordpress.com/2008/06/08/surprise-earths-biosphere-is-booming-co2-the-cause/>

<sup>22</sup> [http://www.americanprogress.org/issues/2008/07/nuclear\\_energy.html](http://www.americanprogress.org/issues/2008/07/nuclear_energy.html)

Another substantial problem is the decline in supplies of potassium and phosphorous, required for fertilizer. As these become more expensive farmers will use less. Nitrogenous fertilizer will also become much more expensive as energy costs increase. With lower applications of fertilizer, food production will decline, accelerating the problem of excess population.

Clearly this is a time for careful scientific appraisal of the situation rather than blind acceptance of the current mainstream belief. One should be aware that there are many scientists who dispute the IPCC assertions, so the skeptic will not be alone.<sup>23</sup> We are now seeing prestigious scientific groups challenging the IPCC<sup>9</sup> and new papers keep appearing. A withering critique by Monckton shows how the IPCC models have failed to predict numerous climate events. He traces this failure to their use of unsubstantiated values for certain parameters in their equations. He re-works these parameters and comes up with a warming of less than 1° C if the level of CO<sub>2</sub> doubles, in contrast with the IPCC which predicts about 3° C.<sup>24</sup>

Patterson recently provided a summary of his findings which shows the degree to which solar activity drives temperature over periods of several decades. He predicts a substantial period of cooling and raises concerns about reduced plant growth rates and shortened growing seasons especially at higher latitudes.<sup>25</sup> Dietz finds several flaws in the IPCC methodology and has found that a global warming of only 0.7° C is likely. He also makes the challenging observation that the expected reduction in emissions from the proposed European carbon and energy tax will produce a temperature reduction of 0.005° C, hardly likely to be measurable, let alone worth the devastating expense.<sup>26</sup> Lomborg states that even the most optimistic implementation of the Kyoto protocols would only postpone warming about 5 years at the end of the century.<sup>27</sup> A scientist long involved with carbon accounting, Evans, has pointed out that governments embarking on expensive projects which damage the economy will face difficulty in the polls when the facts are more widely known.<sup>28</sup>

It is of course possible that a carbon catastrophe will occur in Australia. The most probable cause will be the implementation of costly measures to restrict CO<sub>2</sub> emissions, while competing countries do not do so. We could see our terms of trade decimated, causing work and investment to go overseas. Even if all nations adhere to the same regulations the resulting loss of efficiency will severely impede productivity and in particular will drive up the price of food and other essential commodities. The effect on all nations will be severe and in those nations presently impoverished we can expect widespread starvation. Some would call that genocide. Is that a suitable policy for an enlightened nation? It is clear that a more humane policy would allow use of fossil fuels while nations worked to reduce population in order to adapt efficiently to a world in which all resources are diminishing.

It will indeed be interesting to see how governments respond to these logical challenges.

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<sup>23</sup> Avery, D. <http://canadafreepress.com/index.php/article/3214>

[http://epw.senate.gov/public/index.cfm?](http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Blogs&ContentRecord_id=927b9303-802a-23ad-494b-dccb00b51a12)

[FuseAction=Minority.Blogs&ContentRecord\\_id=927b9303-802a-23ad-494b-dccb00b51a12](http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Blogs&ContentRecord_id=927b9303-802a-23ad-494b-dccb00b51a12)

<sup>24</sup> Monckton, C. <http://www.aps.org/units/fps/newsletters/200807/monckton.cfm>

<sup>25</sup> Patterson, T.

<http://www.nrsp.com/article-Patterson-07.06.20-NP-Read%20the%20Sunsports-Global%20Cooling.html>

<sup>26</sup> Dietz, P. <http://www.john-daly.com/carbon.htm>

<sup>27</sup> Lomborg, B. [http://www.washingtonpost.com/wp-dyn/content/article/2007/10/05/AR2007100501676\\_3.html?sid=ST2007101102222](http://www.washingtonpost.com/wp-dyn/content/article/2007/10/05/AR2007100501676_3.html?sid=ST2007101102222)

<sup>28</sup> Evans, D. <http://www.theaustralian.news.com.au/story/0,25197,24036736-7583,00.html>