Carbon Dioxide and Global Warming

Richard Prosser

This paper very briefly summarises how and why it is that carbon dioxide, whether natural or man-made in origin, is incapable of causing the atmospheric heating, global warming, and climate change attributed to it; and why, therefore, arguments and programs – including carbon taxes and emissions trading schemes – which are intended to limit the addition of carbon dioxide to the atmosphere, are inherently incapable of having any effect on the climate of the earth.

There is no executive summary because in order to gain an understanding of the points made, it is necessary to read and understand everything outlined here. This paper is already a very concise and in many ways simplistic summation of the basic issues surrounding this subject and its associated science.

Earth has one energy input driving its climate, and one only, and that is the sun. There is some latent heat generated by the earth itself, from the thermal output of the planet's molten core, and (albeit negligibly) from certain minor radioactive mineral sources.

Man has no ability to influence the thermal output of the Sun, nor the natural variations in our planet's orbit around it, the combination of which dictates the limits of received solar irradiance on earth, which is the sole external energy input driving our climate.

It is of concern that some observers and commentators regard carbon dioxide as a "pollutant". It is in fact an essential trace gas, vital to all life on this planet (human life included), and the single most important of all plant foods. Carbon itself is certainly present in what could be accurately classed as pollution; smoke and soot and smog, unburned and partially burned particulate matter, the by-products of combustion. But this is not carbon dioxide, it is elemental and molecular carbon bound in a myriad of compounds, none of which are gaseous. Smoke, for those who may not be aware of the difference, is not a gas; it is a diffuse suspension of micro-particles. In physics terms, smoke is a solid.

Ice Ages and the Sun

Over the past half million years or so our planet has experienced four major ice ages each lasting around 100,000 years, punctuated by four interglacial periods each lasting around 11,500 years. We are currently at the wrong end of one such interglacial. What causes these ice ages to begin, and what mechanism of warming causes them to end again?

Earth's orbit around the sun is elliptical, not round. In addition to that, it is subject to variations due to a number of different gravitational influences. Sometimes the earth is closer to the sun, and sometimes it is further away. **Total energy received, from the sun, on the surface of the earth, is measurable, and is generally expressed in terms of watts per square metre.** This energy varies both with relative distance, according to the root mean square law, and because of the actual output of the sun itself, which also varies according to its own cycles. **Total energy output from the sun is not constant. It fluctuates.**

Energy received from the sun covers a massive proportion of the entire known EMR (electromagnetic radiation) spectrum. Some is in the form of visible light. Some is in the form of ultraviolet light. Some is in the form of infrared light, also known as IR, or IRR (infrared

radiation). IR is the part of the spectrum which directly causes warming. The sun also emits radiation in the very long and very short wave bands, the “solar wind” which consists of charged particles, and other electromagnetic outputs such as solar flares which interact with earth’s magnetic field creating aurora, and which can interfere with radio and television transmissions and interrupt power grids.

In addition, the sun experiences very regular cycles of sunspot activity. Sunspots are related to solar flares in that they are more connected with electromagnetic output, than with thermal or kinetic output. Sunspot cycles are more likely to influence weather events on earth than they are to directly influence climatic trends.

Milankovitch Cycles

During the First World War, Serbian mathematician Milutin Milankovitch charted the earth's solar orbital cycles of eccentricity and periodicity which bear his name. He was not the first to observe the phenomenon but he did undertake a greater and more detailed study of it than any of his predecessors. Milankovitch observed, amongst other things, how the gravity of Jupiter and Saturn were able to influence the eccentricity of earth's orbit around the sun, and he plotted long cycles of up to 40,000 years and more, including 100,000 year cycles and 400,000 year cycles, which coincided with major ice ages.

It is in fact the Sun which is responsible for temperature on earth. Temperatures are measurably lower during winter, for example, when the hemisphere experiencing winter is tilted at a sharper angle relative to energy received via insolation. Temperatures also tend to fall at night, when hemispheric insolation is at its minimum. These may seem like simplistic observations; however it is my experience that many proponents of anthropogenic global warming are both simplistic in their outlook, and limited in their knowledge of basic physical sciences. Sometimes I find it helps to point out the basics.

On that subject, it is apparent that the angle of earth’s tilt relative to received solar radiation is an even more important driver of temperature than proximity to the sun. Winter in the northern hemisphere occurs when the earth is at its closest point to the sun on our elliptical orbit, when the southern hemisphere is experiencing summer. The opposing angles of tilt of the different hemispheres mean that received solar radiation generates far lower surface and atmospheric temperatures over the northern hemisphere at that time than it does in the southern hemisphere. The angle of tilt also determines diurnal periodicity, and logically, shorter days equate to reduced insolation (translated, this means that shorter days are colder days).

Milankovitch demonstrated that very small variations in the eccentricity of earth’s orbit, and corresponding angle of tilt, created by the gravitational influence of the larger planets in our solar system, could have significant effects on the amount of solar radiation received on the surface of the earth, and subsequently, significant effects on our climate.

We don't know precisely what temperatures and other climatic conditions existed prior to the keeping of modern records of course, because we weren't there to record them. Instead we rely on proxies, such as tree rings and ice cores and others, from which we can extrapolate prehistoric trends based on contemporary empirical data.

People are still arguing the validity of Antarctic ice cores as proxies for determining prehistoric atmospheric CO2 levels. The latest intelligence seems to suggest that the cores support the observation that **temperature changes precede CO2 changes (by around 800 - 1000 years), which means that increases in atmospheric CO2 are the product of global warming, and not the cause of it.** Carbon Dioxide, as with most (though not all)

other gases, dissolves more easily into cold liquids, including water, than it does into warm liquids. Ordinary physics tells us that. During Ice Ages, atmospheric CO2 is dissolved into the oceans. During interglacials, when the waters warm up again, dissolved CO2 is outgassed again, resulting in an upwards change in measurable atmospheric CO2 levels.

But even if that argument is put to one side, the very fact that we have ice which is over 400,000 years old should tell us that even during past interglacials which were warmer than the one we currently live in, the ice did not melt. Why then should we be concerned that it might do so during this less-warm interglacial?

Energy retention and reflection

All received solar energy which arrives on earth is ultimately reflected again. If it were not, our planet would continue to accumulate heat until it resembled Venus.

The so-called “Greenhouse Effect” is a process by which the reflection of received energy is **delayed** by certain gases, allowing said energy to impact on certain substances. Chief amongst the concerns of Global Warming/Climate Change believers is the fear that such delayed reflection – and by extension, retention of energy and increase of temperature - may cause accumulated ice masses on earth to melt, contributing to seal level rise and the subsequent inundation of coastal regions and low-lying islands and atolls.

Although some gases do have a documented delaying effect, fears surrounding this phenomenon are largely a red herring; the received energy is still ultimately reflected. Temperature and its associated trends is related directly to the amount of energy being received. When more energy is being received, average temperatures rise. When less energy is being received, average temperatures fall. Greenhouse gases **slow** the reflection of received energy back to space, but they do not trap it permanently or prevent it from being re-radiated. The Greenhouse Effect caused by gases in the atmosphere does not create a bubble of heat in the way that a layer of glass does in a glasshouse.

If the reflection or re-release of received energy back to space is delayed, so it can contribute to the temporary retention of heat in ready sinks such as bodies of water, including the oceans.

This temporary retention of heat can and does affect climate cycles, again primarily via a buffering or delaying effect.

The retention of heat by water and gases in the atmosphere and in the oceans has a marked stabilising influence over climatic trends which would otherwise fluctuate rapidly in response to variations in received solar irradiance. In this context the greenhouse effect may be said to be a very good thing, and is probably as important as any other vital parameter as far as the development and sustenance of life on earth is concerned.

CO2 concentration and molecular considerations

CO2 is a small simple molecule distributed evenly throughout the atmosphere, as we know from the Gas Laws. It absorbs only a small proportion of wavelengths of light (two small sections of the nanometre band) in the IR part of the EMR spectrum, limited by its size and geometry. The total amount of solar radiation from the sun within these wavelengths is finite, and is determined by its overall thermo-kinetic output and colour temperature. **Increasing concentrations of atmospheric CO2 have a linearly diminishing effect on IR absorption, because past a certain saturation point, all the incoming CO2-absorbable**

IR has already been absorbed. This point begins at anything above zero concentration and the effect peaks at a concentration of about 50ppm. Beyond that level there is only a minor and logarithmically diminishing increase towards a near limit point. The concentration of CO2 in the atmosphere at the present time is just under 400ppm.

The range of this non-linear effect is determined largely by the harmonics of reflection, the nature of which means that some wavelengths which would not ordinarily be absorbable by CO2 are altered and become absorbable when reflected. Relative cloud and snow cover can and does affect this parameter, which is also known as the albedo effect. During the Mesozoic and Palaeozoic eras, atmospheric CO2 reached concentrations of above 7000ppm. The sky did not fall, the sea did not turn into battery acid, and coral didn't become extinct.

There was however a profound effect on, and prolific increase in, the size and growth rates of plant matter. In spite of interglacial warmings and interglacial increases in atmospheric CO2, we still have coral and polar bears and ice caps, and we haven't been inundated by non-existent ice melts, **because increases in CO2 beyond a certain level are simply not capable of causing atmospheric warming, at least not with our Sun and its IR profile as the sole source of incoming heat energy.** Why then should we be worried about the nature or volume of emissions of CO2 to the atmosphere, regardless of their source?

Once all the IR radiation, produced by the sun, which is able to be absorbed by CO2, has been absorbed, it does not matter how much more CO2 is added to the atmosphere, because there is no more IRR left to be absorbed. If no more IRR is present it cannot be absorbed and therefore cannot contribute to further warming. This is a very important consideration; **the total amount of IRR emitted by the sun is finite, and once it has all been absorbed, adding more CO2 cannot and does not make any difference to temperature.**

Artificial CO2 enrichment

Commercial flower and vegetable growers deliberately introduce high CO2 levels into their greenhouses, from bottled sources and natural gas burners, in order to stimulate rapid healthy plant growth. CO2 levels in such greenhouses are typically maintained at 1,000 - 1,300 ppm for flower production, and up to 1,800 ppm for tomato and some other vegetable crops. **These carbon dioxide-enriched greenhouses are neither noticeably nor measurably warmer than comparable greenhouses utilising only the natural atmosphere**. If the increased concentration of CO2 did cause the temperature to rise as AGW theory proposes, greenhouse environments would become too hot for optimal plant growth. The grower would then have no option but to vent the greenhouse to atmosphere, thereby negating the beneficial - and costly - effects of CO2 enrichment. This does not happen, however, and it has not happened over the course of the 100 years or so since greenhouse CO2 enrichment began.

I should perhaps add that it is possible to run CO2-enriched greenhouses at a higher temperature for a given crop than is optimal in a natural atmosphere greenhouse, but only on cloudy days when bright solar irradiance does not cause plant stomata to close.

With stomata open, plants are able to take advantage of both increased CO2 and higher temperatures in order to achieve faster growth rates.

However, the additional heat required to increase the temperature needs to be introduced artificially, because, as we have seen, the increase in CO2 concentration does not cause it to happen on its own.

In greenhouses using LPG burners to create higher CO2 levels, the heat from combustion can be the source for this additional energy. In greenhouses utilising bottled CO2, temperatures must be increased by firing up the grower's regular greenhouse heating system, which is typically based around hot water radiators distributing hot water heated by coal, diesel, or gas.

Again, the point to note here is that the increased concentration of CO2 does not cause the greenhouses to heat up all by themselves.

Atmospheric CO2 does not have seriously deleterious effects on human health until it reaches concentrations of above 10,000 ppm. In any given closed environment such as an office, boardroom, vehicle etc where numbers of people are working and breathing, CO2 may be as high as 1,500 ppm, almost four times its present environmental level. Alarms and scrubbers utilised in mines, submarines, coolstores, wineries and breweries and the like, are calibrated to activate at levels above 5,000 ppm, whether they are used in conjunction with low oxygen sensors or not.

Water vapour and other greenhouse gases

Carbon dioxide, as detailed above, does class as a "greenhouse gas", within the limits of its efficacy as described. Of the other greenhouse gases, water vapour is undeniably the most important, accounting for something in the order of 97% of the greenhouse effect. As almost all of this water vapour (again, around 97% of the total volume of water vapour in the atmosphere) is natural in origin, there would appear to be very little which we mighty humans can do about it; nor do I believe we would want to, because without water, water vapour, and its resulting greenhouse effect, our planet would resemble Mars.

I should point out, once again for those who may not be aware of the difference, that water vapour is a gas. It is not clouds or fog or steam. Clouds and fog and steam are not gas, they are diffuse suspensions of fine liquid water droplets. The difference is akin to smoke and smog being suspensions of solid particles, whereas carbon dioxide, as we have seen, is indeed a gas.

The contribution of man-made CO2 to the “Greenhouse Effect” is thus not more than 3% of 3%, or 0.0009% of all greenhouse gas warming of the earth’s atmosphere, and that contribution, as discussed above, does not materially increase once the concentration of CO2 in the atmosphere rises above around 50ppm. Again, as noted above, it presently stands at around 400ppm.

Some proponents of AGW theory suggest other gases as being "even more effective" in greenhouse terms than CO2, their chief villain being the humble methane, which is credited with being 20 times more evil than CO2. The single largest source of methane to the atmosphere, by many orders of magnitude, is not flatulence from dairy cows in New Zealand, or the great industrial activities of Europe, Asia, and North America, but in fact the decomposition of dead plant matter in the world's great forests.

There are presently around five million dairy cows in New Zealand. Given that nearly seventy million buffalo were slaughtered in North America between 1700 and 1850, one could perhaps be forgiven for assuming that the planet should still be in credit as far as the warming effect of emissions from such beasts were concerned.

Sea levels

I do not dispute that "Global Warming" occurs during the interglacial periods which prevail in between Ice Ages. Of course, when an ice age ends, temperatures will warm up. If they didn't, by definition, the ice age would not end, and by extension, our civilisation would not exist. In addition, it is wholly natural and expected that temperatures will continue to increase until they begin to decrease again. Any other scenario would defy logic. On top of that, it is undeniable that aqueous thermal expansion will cause mean sea levels to increase, in line with this warming. **But it is also true that some islands are rising and others are sinking due to the unrelated phenomenon of plate tectonics.** I recall one modern study of Tuvalu undertaken by an Australian Government metrological agency which found no relative change in mean sea levels over an eighty-year period, and an Israeli study which showed movements up and down within a two-metre range on a section of the Israeli Mediterranean coast over the past 2,000 years.

I say mean sea level because of course there is no such thing as "sea level". The level of the sea relative to any given land mass varies not only with the tides but with ocean temperature and atmospheric pressure. Ocean temperatures are themselves subject to the movement of currents which are known to fluctuate over periods of many years.

I am unable to find any actual evidence that various low-lying nations, islands, and atolls are actually being swamped by rising seas, regardless of the cause of such rise. Despite watching the News every night, and trawling the web for news sites from around the world, I am unable to find reports of people being evacuated, groundwater being contaminated by seawater, banana plantations being turned into saltwater paddy fields, etc. Seriously, I just can't find them – apart from one account of the groundwater supply on a small island being overdrawn to supply a fish canning plant, resulting in the aquifer becoming affected by seawater seeping in.

It has been suggested that salination of Tuvalu's main island Funafuti is as much the product of erosion, caused by poor management of wastewater runoff, allowing the ingress of high tide water, as it may be from any other cause.

It is well known and well documented that the southern end of mainland Britain has been slowly sinking into the sea, and Scotland rising, since the end of the last major ice age.

Ice levels

Conversely, I am concerned by reports of overall ice mass increasing both in the interior of Greenland and on East Antarctica. Some people may not be aware that the South Pole Station operated by the United States Antarctic Programme is into its third incarnation, the previous two bases both having been swallowed by a slow gradual increase in accumulated snow levels which have subsequently turned to ice.

There is some thinning of ice around the fringes of West Antarctica and on the Antarctic Peninsula, as there is on some sections of the Greenland coast. I have read suggestions that this may be due to changes in ocean currents and even the influence of underwater volcanoes.

Whatever the cause, I think it of greater import that the increase over the interior of Greenland and over the great mass of East Antarctica, comprising as it does in excess of 85% of the Antarctic continent, demonstrates that by whatever mechanism, **total ice mass in both polar regions continues to increase.** The burying of two entire South Pole bases is unsettling testament to this process.

The advance and retreat of glaciers around the world is often cited by both sides in the AGW debate. However **glacial advance and retreat is driven by precipitation in the glacial catchment, not by relative local temperatures.** Glaciers all flow down from a catchment to a terminus, and at the terminus they always melt. If they did not, rivers of ice would flow on unchecked across the globe.

Glacial mass is such that glaciers have very long lag times in response to major climatic temperature shifts. Major glaciers such as those in the Himalayas take between 500 and 1,000 years to respond to temperature shifts. Small glaciers such as those in New Zealand may respond by losing mass as quickly as 100 – 150 years after a major temperature shift.

Historical precedents

Reduction and retraction of northern polar sea ice is neither unprecedented nor uncommon. The North-West passage, a sea route around the top of North America north of latitude 70°N, is so named because it was first made navigable in 1903 when the ice retreated far enough to allow the passage of ships. From 1906 until 2009 the “passage” remained closed to shipping as it was perpetually blocked by sea ice.

The US Navy submarine USS Skate made two trips to the North Pole in 1958 and 1959 and was able to surface to discover open water. The northern pack ice retreats every summer, some years more so than the average, some years less so. Prevailing weather conditions, notably winds, can and do dramatically affect the extent to which the sea ice expands or retracts within seasonal variations.

Many reports, both written and historical, exist which detail extreme variations in local and global climate patterns during the course of human history and recent civilisations.

1,000 years ago the Vikings settled Greenland, grazing cattle on what were the lush pasturelands of that northern land mass. In Roman Britain, grapes were grown and wine made as far north as York.

Centuries later, the climate had cooled to the degree that ice fairs were held on the surface of the frozen River Thames in London, and canals in Holland froze solid over the winter as a matter of course. Today, the south of England seldom experiences frosts.

Temperature measurements

Until the advent of satellite measurements in the late 1970s there was no accurate global system for recording temperatures. Ground stations lacked any form of universal calibration standard. The Fahrenheit scale did not exist prior to 1724, and British and Chinese written records which comprise the best historical accounts rely on the accuracy of local thermometers and the skill of those using them, as well as our contemporary ability to interpret data and accounts as they are recorded.

In recent decades, the Urban Heat Island effect has compromised many modern western records, as urban growth and development has brought artificial heat sources such as tarmac roads, internal combustion, smog, and air conditioning outlets closer and closer to what were once isolated recording stations. Satellite recordings can now show us the inaccuracies which the Urban Heat Island effect visits upon modern ground stations.

Much of the globe experienced a warming period up until the early 1940s, when a cooling phase began. This phase lasted until roughly the end of the 1970s when another warming period ensued. This most recent warming ended in 1998. Since 1998 there has been no increase in averaged global temperatures, and since approximately 2005 – 2006 there has been a very slight cooling trend, though this is still too recent and too minor to be declared unequivocal; however it is fair to say that whatever its cause, **the modern phenomenon which was originally called Global Warming, and which has come to be known as Climate Change, actually ended 16 years ago.**

The science is not settled

Despite claims to the contrary, there is no scientific consensus as to either the existence of Global Warming itself, or any degree of anthropogenic input into any such phenomenon.

Even if there were, this would not in itself constitute proof of correctness. Science is about provable fact. It is not a popularity contest between opposing ideas. Ideas which have been held as absolute truths by a consensus of learned people have been proven to be completely false many times in the past.

Once upon a time there was a consensus that the earth was flat. Once upon a time there was a consensus that powered heavier-than-air flight was impossible. Once upon a time it was held that the atom was indivisible and indestructible. Plate tectonics, radio waves, supersonic flight, and a host of other realities have all been decried as the ravings of heretics and madmen, by a consensus of learned scientists of their respective times, until such time as someone has come along and proven the naysayers wrong.

I believe the explanation behind this phenomenon is that at any given point in human history, mankind has held the belief that we already know everything. I do not subscribe to this belief. I hold that we know a great deal more than we did 100 years ago, and a great deal less than we will know 100 years from now.

I regard claims along the lines of “99% of scientists agree, and the rest are either not credible or they are in the pay of big oil” or similar, as being frankly outlandish. They lack rationality, and contribute little to the debate other than to engender impressions of zealotry and bias on the part of those making them, in the minds of those who such claimants are attempting to convert.

This link is to a list of in excess of 1,350 peer-reviewed papers published in reputable journals, which question or refute all or part of the Anthropogenic Global Warming theory.

http://www.populartechnology.net/2009/10/peer-reviewed-papers-supporting.html#Arctic

In excess of 30,000 scientists have signed various petitions and declarations maintaining a disbelief in, or non-acceptance of, claims that human activity is affecting the climate of the earth. Several are linked below:

http://www.oism.org/pproject/

http://www.climatescienceinternational.org/index.php?option=com_content&task=view&id=37&Itemid=1

http://www.businessinsider.com.au/nasa-scientists-dispute-climate-change-2012-4

Muddy waters

Why do some people still believe, or at least profess to believe, the idea that man is somehow affecting the climate of the earth, in the face of overwhelming and continually rising evidence to the contrary?

Former Czech president Vaclav Klaus once postulated that belief in the idea of man-made global warming had become a religion in its own right; I believe he may be correct. Religion is a matter of faith, not a matter of science or proof, and adherents to a faith – any faith – tend to become ever more steadfastly and unshakeably wedded to the constructs of it, as challenges to its basis are put before them. Such is human nature.

In addition, I believe that most people are, fundamentally and inherently, basically honest and good. They do not seek to lie, to cheat, to deceive; and as such, they are reluctant to believe, or at least shy away from believing in the first instance, that others may be being untruthful with them. Some people may simply not have contemplated, or wished to contemplate, the possibility that an idea, a theory, a global movement of such proportions as those occupied by the AGW hypothesis, supported by so many mainstream scientists, promoted by the United Nations, accepted by Governments, and endorsed by the educational, media, and scientific establishments alike, may in reality be without actual foundation.

The man-made global warming/climate change idea may well be an elaborately constructed lie, though I strongly suspect it is actually the product of a number of overlapping agendas, rather than any kind of deliberate conspiracy. Scientists are ordinary people; there is no real definition for a scientist beyond a requirement for a science degree and a predilection for wearing white coats. Anyone engaged in the study or practice of science could be termed a scientist, and scientists are as vulnerable as anyone else to the whims and vagaries of politics, industry, commerce, and finance. They all have bills to pay and jobs to secure.

Funding for science is guaranteed by progress towards results, not by the achievement of those results. So long as the waters remain muddy, and more research is needed, so funding grants may continue to flow, ensuring ongoing employment and financial security. It is very much in the interests of science to keep the debate alive, rather than solving it.

Some people involved in this field may well be fully cognisant of the falsity of the AGW theory, but hope that actually harmful pollution may be addressed by frightening ordinary people and politicians into believing that environmental Armageddon is imminent unless humanity changes its ways. It is my view that such an approach is both commendable and misguided in equal measure. I believe people are fully capable of understanding the truth, and that desirable outcomes are best achieved by giving them the entire story.

And some may simply be mistaken.

But whatever the reason, I believe, after reading and contemplating all the conflicting arguments put before me, that those who proclaim the supremacy and correctness of the AGW theory are fundamentally and essentially incorrect. There is no global warming, and when there was global warming, it was not the fault of mankind, and it was most certainly not the fault of carbon dioxide, which is simply not capable of causing it.

In conclusion

I am not a scientist. Neither are most people, and more to the point neither are most politicians the world over.

However politicians are tasked with the responsibility of determining policy on the basis of such relevant scientific advice as pertains to any given matter at hand, and in so doing, politicians must draw conclusions by way of their own reasoned consideration of what may be, and frequently are, greatly conflicting theories and hypotheses.

It behoves politicians and other policy makers to gain an understanding of the basic principles behind contentious issues, even where it is unrealistic to expect politicians to become versed in the minute and complex detail of the science within those principles.

It is not good enough in my view for politicians to simply accept the arguments and advice of one side of a debate or the other based on their assessment of the relative qualifications of those giving that advice, particularly when views and proposals postulated by persons of comparable learning may be diametrically opposed.

It behoves us to consider such arguments as objectively and impartially as possible, and arrive at reasoned conclusions which are devoid of emotive or philosophical preferences.

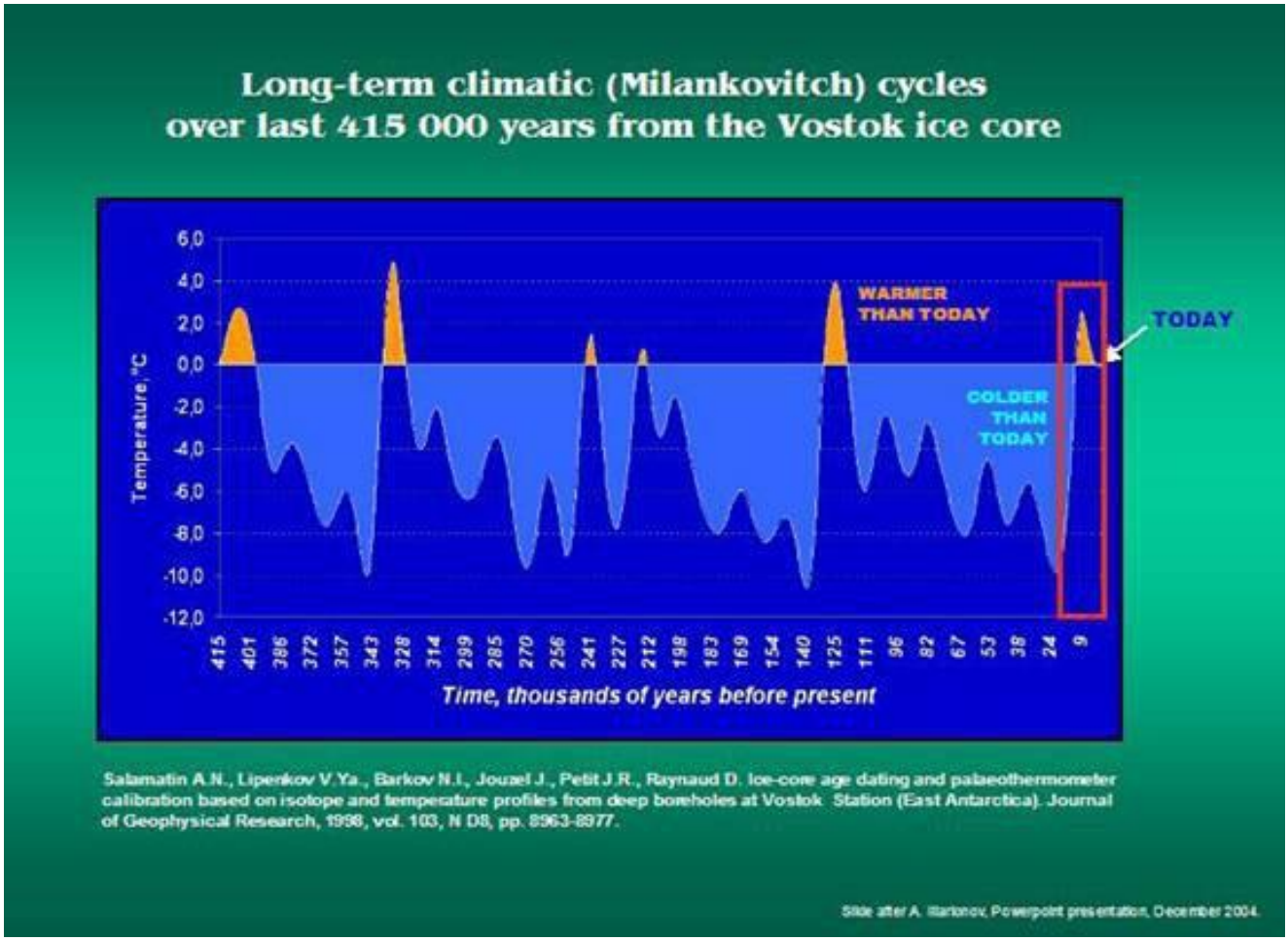
There is such a thing as pollution, and there is a very real need for us to take action to reduce this, and to protect and preserve our environment and our planet.

But this is a different and separate matter, and it requires a different and separate approach to that being promoted as a cure for AGW. We do nobody any favours by pretending that the two are one and the same, and by scaremongering the general public with lies, fiction, and propaganda in the process.

I am sure there is a great deal more which could be raised concerning this matter, and I know there are many sub-topics which I haven't even touched on. It may interest you to know that I was, myself, very concerned about the possibility of AGW, once upon a time. That time was more than ten years ago and lasted several months; until I began to research the subject independently and objectively.

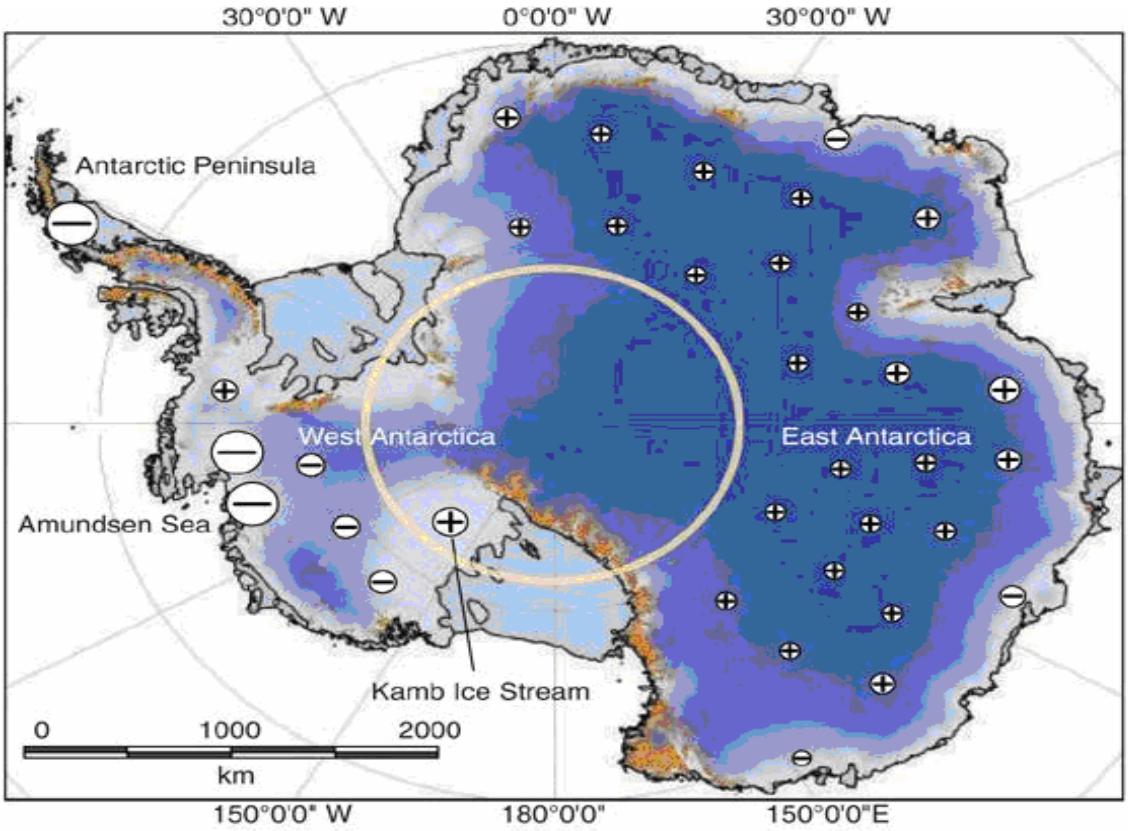
Naturally I have a mountain of information to back up what I have discovered over the last decade of delving into this subject, a delving which I would reiterate was prompted by a desire to support the idea that we humans were somehow responsible for what I quickly came to regard as the non-existent phenomenon known as Global Warming.

I will leave you with a few choice piccies from the album I have accumulated over that decade.

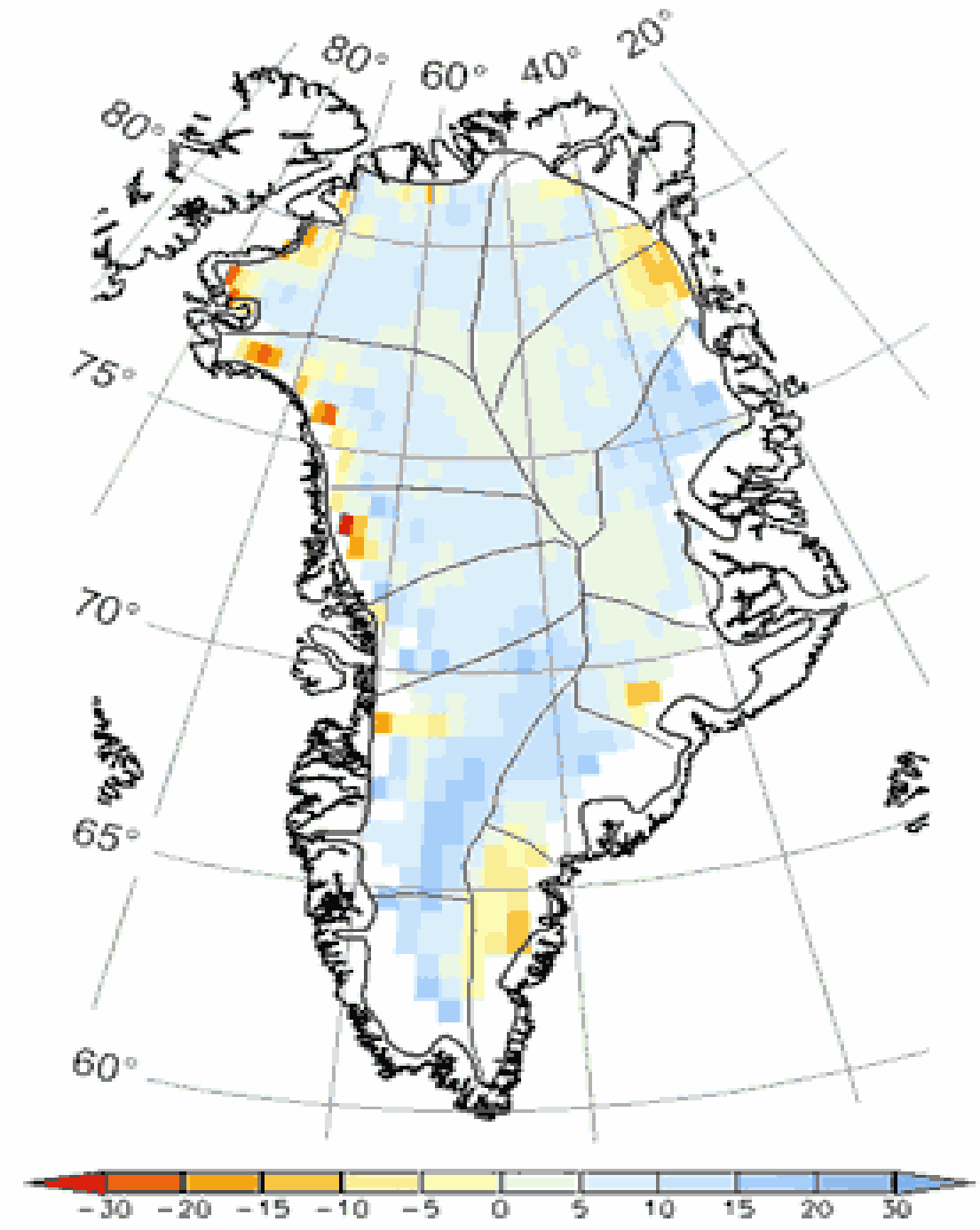


Ice Core data from Vostok Station in East Antarctica, published in the Journal of Geophysical Research, 1998, volume 103.

USS Skate at the North Pole, August 1958



In some parts of Antarctica, such as East Antarctica, the ice sheet is thickening (+ symbols), whereas in others, primarily in West Antarctica it is thinning (– symbols). (Source: Vaughn, 2005).



Greenland ice-sheet elevation change in cm/year (see colour scale) derived from 11 years of ERS-1/ERS-2 satellite altimeter data, 1992-2003. Result: 5.4 cm/year *increase.*

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November 7th 2012

Updated December 2nd 2014