

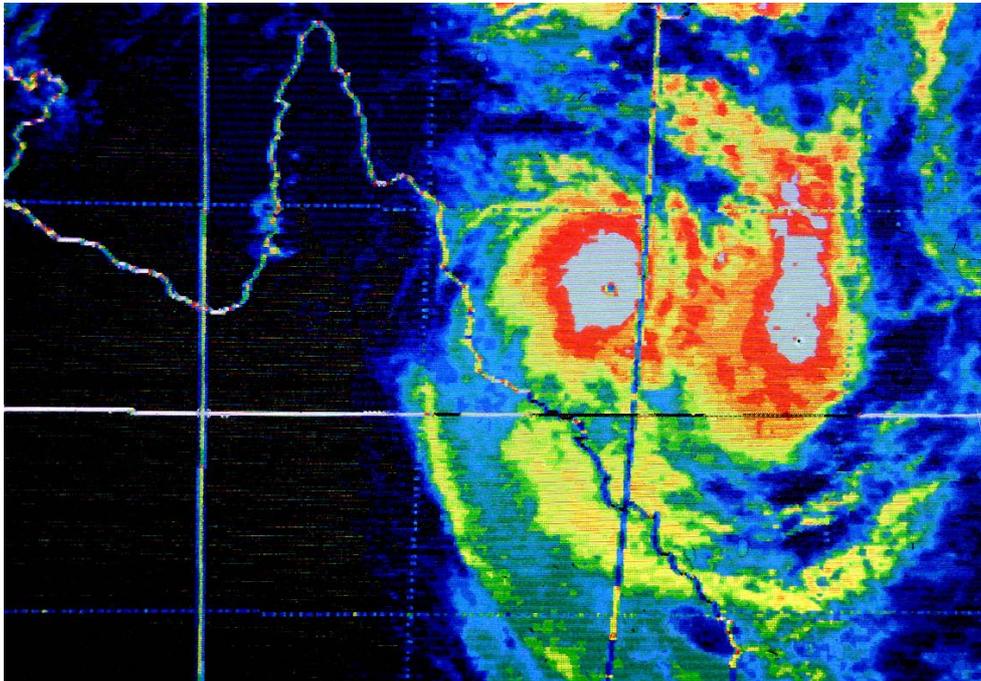


Occasional Paper

Some Australian Views on Climate Change

abstracted by Bob Carter from the published writings of

Professor Bob Carter
Mr Ian Castles
Professor Aynsley Kellow
Mr William Kininmonth
Professor Garth Paltridge
Professor Ian Plimer



There is every reason to believe that the variability of global temperature and other climate characteristics that have been experienced over the past century are part of the natural variability of the climate system, and are not a consequence of recent anthropogenic activities.

William Kininmonth

Quick Bites

To focus on the chimera of anthropological greenhouse warming while ignoring real threats posed by the natural variability of the climate system is self-delusion on a grand scale.

William Kininmonth

Governments must be advised that the economic projections used in the Intergovernmental Panel on Climate Change (IPCC) emissions scenarios are technically unsound

Ian Castles

The public conditioning process involves spreading the belief that announcements of the IPCC are the consensus opinion of the vast majority of knowledgeable climate scientists. That belief is simply not true.

Garth Paltridge

The key policy questions are about what costs we should accept to attempt to mitigate how much climate change, and on the basis of what degree of scientific certainty.

Aynsley Kellow

There is an urgent need for governments to shake themselves free of the partial advice provided by environmental advocacy groups and government science agencies, all of whom have a strong and often undeclared self-interest in climate change matters.

Bob Carter

Underpinning the global warming and climate change mantra is the imputation that humans live on a non-dynamic planet. Greenhouse propoganda on climate change is ignorance of the history of our dynamic planet hiding behind unscientific political policy.

Ian Plimer

Preface

The statements in this leaflet are sourced from the writings of six independent, experienced Australian research professionals.

These persons have no interest in furthering any political agenda on climate or related environmental issues.

Rather, their comments and analysis are based upon the tradition of dispassionate honesty which characterises the scientific method. They are solely interested in using their expertise to understand which of the many claims about global climate change published in the scientific literature are supported by observational data and sound theory. None of these persons has any wish to risk damaging their reputation by disregarding solid scientific evidence.

Anybody who acts as a 'believer' in these matters - supporting a one-sided political agenda, or disregarding, wilfully misrepresenting or manipulating the observational data - risks being accused of scientific fraud.

The Intergovernmental Panel on Climate Change (IPCC) was established by the United Nations in 1990 to advise governments on climate change policy. Many distinguished researchers have assisted the IPCC in its deliberations, despite which important pronouncements in their most recent *Advice to Policymakers* are as much political as scientific. Furthermore, three of the key assertions regarding climate change made in the IPCC's *Third Assessment Report* (2001) have now been independently refereed in the cauldron of scientific accountability. All have been found wanting. Sadly in view of the hopes invested in it, the IPCC can no longer be relied upon to provide dispassionate or disinterested advice.

Undoubtedly, future research will provide an understanding of the causes of climate change of much greater depth than obtains today. In the meantime, scrupulous honesty is required of those scientists and others who choose to become involved in the public policy debate on the matter.

Bob Carter
Townsville (October, 2004)

Mr William Kininmonth is a graduate of the University of Western Australia, with Masters degrees from Colorado State University (Science) and Monash University (Administration). He is a former head (1986-1998) of Australia's National Climate Centre, which carries responsibility for managing data archives, monitoring Australia's changing climate and advising the Australian government on the extent and severity of climate extremes, including recurrent droughts. William is also author of the recently published (2004) book *Climate change: A Natural Hazard*.

Email: w.kininmonth@bigpond.com
Phone: +61-3-9853-9395

*The one-dimensional **radiation energy budget model** used by the IPCC is a prescription for flat earth physics whose application leads to erroneous conclusions. The combination of a simple one-dimensional physical construct that is inadequate as a theoretical framework for anthropogenic greenhouse gas climate forcing, and computer models that are in a rudimentary state of development, has led the IPCC to false conclusions.*

*IPCC makes the claim that the **recent warming** is unusual, even unprecedented. The claim, supported by a dubious reconstruction of global temperatures over the last millennium and computer modelling, is the basis for the view that the warming, at least of the past 50 years, is due to anthropogenic greenhouse gases. Such a claim ignores the extent and speed of variability of past climate that can be interpreted from ... evidence laid down in the oceans, lakes and ice sheets. It even contradicts cultural and archaeological records that reflect the rise of regional communities (even civilisations) during periods of favourable climate but their demise as conditions deteriorate.*

*The simple one-dimensional characterisation of the climate system portrayed by the IPCC is grossly inadequate. It completely ignores fundamental processes that regulate energy flow through the climate system and has led to erroneous conclusions about the importance of **radiative forcing** of the climate system. There are many important processes in addition to radiation that also need to be considered because of their roles in regulating energy flow through the climate system, and their contributions to climate variability.*

***Climate is naturally variable** and it poses serious hazards for human kind. To focus on the chimera of anthropological greenhouse warming while ignoring real threats posed by the natural variability of the climate system is self-delusion on a grand scale.*

See also:

<http://www.multi-science.co.uk/climatechange.htm>
<http://www.austehc.unimelb.edu.au/fam/1442.html>

Mr Ian Castles is a former head of the Australian Department of Finance (1979-1986), Australian Statistician (1986-1994) and President of the international Association of Official Statistics. He has experience of consultancy, policy formulation and service in national and international organisations on a wide range of statistical issues. Ian is currently a Visiting Fellow at the Asia Pacific School of Economics and Government at Australian National University, Canberra.

Email: ian.castles@anu.edu.au

The IPCC presents itself as the authoritative international source of advice to policymakers and researchers on all aspects of climate change. Unfortunately, its huge influence in the debate over the Kyoto Protocol and wider climate change issues is matched only by its implacable resistance to the possibility of error in its widely publicised reports.

*The 40 **emissions scenarios** used by the IPCC in their Special Report on Emissions Scenarios are unsound, in that they convert national GDP data to a common measure using market exchange rates, rather than the purchasing power parity rates now favoured by expert opinion.*

Because of this and built-in assumptions about the extent to which the gap between rich and poor countries may be closed during the twenty-first century, projections of output are improbably high. This is true even of scenarios that give the lowest figures for projected cumulative emissions of greenhouse gases for the century. Hence the SRES projections do not, as is claimed, encompass the full range of future uncertainties.

***Average real incomes** in the United States increased by a factor of perhaps 5 to 1 in the nineteenth century, and in Japan by a factor of almost 20 to 1 in the twentieth century.*

Thus the historical record gives no support to IPCC projections that in the course of the twenty-first century there could be increases in average incomes in the entire continent of Asia by a factor of 140 to 1, or even of 70 to 1 which is the assumption underlying the scenario yielding the lowest projected level of emissions.

Yet it is upon such fantastic assumptions that the IPCC's projections of emissions, and therefore of future temperatures, are predicated.

*I believe that it is important that governments be advised as soon as possible that the **economic projections** used in the IPCC emissions scenarios are technically unsound, having been derived by converting national GDPs in nominal values into a common currency using exchange rates. This procedure is not permissible under the internationally-recognised System of National Accounts, and was recently rejected by an expert group report to the U.N. Statistical Commission.*

*The Economist, which reviewed the debate about **emissions scenarios**, pointed to the IPCC's "dangerous economic incompetence". Regrettably the emissions Panel has ignored these calls; it decided in November 2003 that the scenarios in the SRES*

provided "a credible and sound set of projections, suitable for use in the next assessment report".

See also:

<http://apseg.anu.edu.au/staff/icastles.php>
<http://www.ipa.org.au/pubs/special/climate/castlespaper.html>

Professor Aynsley Kellow is a graduate of the University of Otago, and currently Head of the School of government at the University of Tasmania. He has written numerous books and articles on public policy and risk management, with especial reference to environmental policy and administration, including climate change. He recently published, with co-author S. Boehmer-Christiansen, *International Environmental Policy: Interests and the Failure of the Kyoto Process*.

Email: Aynsley.Kellow@utas.edu.au
Phone: +61-3-6226-7895

*The view that the Medieval Climate Optimum and the Little Ice Age represented considerable **climate variation** well before the emergence of the carbon-based industrial revolution was, until recently, the accepted orthodoxy.*

The challenge to that orthodoxy came from the publication in 1998 by Michael Mann and collaborators of what has become known as the Hockey Stick paper, which appeared to rewrite the climate history of the millennium by grafting the actual available temperature record on a reconstruction from proxies.

Whether this is a case of Paradigm-changing Mann or Piltdown Mann will be determined by the course of scientific history. But the alacrity with which the Mann et al. paper was accepted is of considerable interest from the perspective of the politics of science, and that Mann was a lead author in the IPCC process that formed "the consensus of top international researchers" (about climate change) is a detail of vital relevance.

*The **key policy questions** are about what costs we should accept to attempt to mitigate how much climate change, and on the basis of what degree of scientific certainty. Not only is science alone unable to provide the answer; neither can the precautionary principle, since it cannot tell us how much precaution we should exercise. Such questions are inescapably political, and inextricably bound up with questions of ethics and interests.*

*In a political sense, the most significant winners and losers in relation to climate change policy are perhaps those affected by the policy rather than by the risk of accelerated climate change. The costs of climate change will be remote in time and interests affected by them poorly organised, but the winners and losers associated with the policies adopted are in the present and much better organised. But one's **risk assessment** (of climate change) differs substantially depending on whether one lives in a low-lying island state or an elevated inland state (Adams, 1995). Risk assessment cannot be based*

upon science alone. It inevitably reflects different national circumstances and subjective factors.

See also:

<http://www.utas.edu.au/government/AK.html>

Professor Garth Paltridge, FAA, is an atmospheric scientist who graduated from the Universities of Queensland and Melbourne. His experience includes research and consultancy from within the CSIRO Division of Atmospheric Research, where he was Chief Research Scientist from 1982 and 1989. He was Director of both the Antarctic Cooperative Research Centre and the Institute of Antarctic and Southern Ocean Studies at the University of Tasmania between 1991 and 2002. Garth is author of many scientific and policy papers concerned with climate change.

Email: g.paltridge@utas.edu.au
Phone: +61-3-6226-2971

The atmosphere and the ocean are turbulent. This means that very small fluctuations can grow in size and alter the large-scale processes within the system. No matter how detailed are our measurements, there can be undetected fluctuations smaller than the distance between them. These can grow and create large-scale changes which are inherently unpredictable. As a consequence, it will never be possible to have skilful weather forecasts beyond a week or two.

*Thus the science of climate change is plagued by **uncertainty**. At least part of that uncertainty, and perhaps most of it, will never be resolved.*

*Any reasonable simulation even of present day climate requires **computer models** to be tuned. The models contain parameters (i.e. pieces of input information) whose numerical values are selected primarily to give the right answer about today's climate rather than because of some actual measurement. The problem with tuning is that it makes any prediction of conditions different from those of the present far less believable.*

Different modellers have developed their own particular ways of simulating the processes determining climate, and used as well their own values of tuneable parameters. Thus has emerged a highly satisfying spread of forecasts of a likely rise of ~1-6 degrees in Earth's temperature over the next hundred years. However, the complexity of the models is so great that it is extremely difficult, even for other climate modellers, to establish exactly why one model should give a vastly different answer to another - let alone establish which is the more likely to be correct.

The bottom line is that most scientists - certainly most physicists and mathematicians who are used to such things - strongly distrust large-scale numerical models which rely heavily on tunable parameters and other artificial constraints to keep them from going haywire. Particularly do they mistrust the output of models whose predictions cannot, for lack of sufficiently detailed data, be tested against real events of the past.

Most of the developed countries have institutionalised their greenhouse activity within government agencies devoted specifically to mitigation of global warming. Their budgets are enormous. It is not likely that the public servants who staff them will be receptive to doubts about their reason for existence. Nor, for that matter, are the actual research institutions concerned with global warming likely to bite the hands that nowadays feed them.

*The **public conditioning process** which follows involves spreading the belief that announcements of the IPCC are the consensus opinion of the vast majority of knowledgeable climate scientists. That belief is simply not true.*

The fundamental question still to be answered is - in view of the huge existing uncertainty as to the causes of climate change - whether the best course of action is to spend money on adaptation to change if and when it occurs. This question has been more-or-less deliberately excluded from most of the national and international debate in order not to divert attention from attempts to reduce greenhouse gas emission, such as the Kyoto Protocol.

See also:

http://www.antcrc.utas.edu.au/tpac/staff/gwp_cv.html

Professor Bob Carter, Hon. FRSNZ, is a graduate of the University of Otago and Cambridge University. He has been Director of the Australian Secretariat of the Ocean Drilling Program, Chair of the Australian Marine Science and Technology Grants Scheme, and Chair of the Australian Research Council's Panel for Earth, Engineering and Applied Sciences. Bob is the author of many scientific papers and articles on past environmental change, including a recent paper in *Science* magazine which describes the longest (4 million year-long) continuous high-resolution climatic record available for the Southern Ocean.

Email: bob.carter@jcu.edu.au
Phone: +61-0419-701-139 or +61-7-4771-2222

*Alarmist computer models notwithstanding, a human-induced warming of **Earth's atmospheric temperature** has not yet occurred to a degree that can be measurably distinguished from natural variations. More specifically, the pattern of "global" surface temperature change over the last 100 years does not match the smoothly-increasing curve of atmospheric carbon dioxide which is so widely alleged to be the cause.*

Additionally, the ancient climate record shows that in the past increasing temperatures preceded increases in carbon dioxide. This means that in the real world atmospheric carbon dioxide content cannot be the primary cause of global warming. In this regard, it should always be remembered too that the computer models which predict 1-6^o C of future warming from greenhouse gas accumulation are no more nor less reliable than computer models which predict the future of the stock market.

The IPCC's (and many scientists') fixation with judging modern climate trends against the last 1000 years is intellectually lazy, if not actually dishonest. There is nothing whatever about the last 1000 years of Earth history that has any especial relevance to judging contemporary climate change.

When the ancient climatic record is examined on longer timescales of thousands to hundreds of thousands of years, it is seen to encompass many occasions of **rapid climate change**.

During such an episode the temperature at a particular site can swing from almost full glacial to full interglacial conditions, or the other way round, in periods as short as one or two decades. The mechanism controlling these rapid swings remains unknown, and for all we know one could have started yesterday. Reassuringly, perhaps, in the past rapid climate changes seem to have been commoner during glacial periods compared to warm interglacials such as the one we live in today.

It has become increasingly apparent lately that the last 1,000-year interval which is the context for most IPCC advice and analysis is a completely inadequate period over which to assess global climate change. The focus of discussion, therefore, is shifting away from the short-term mechanisms studied by meteorologists and climatologists, to attending more to the knowledge base for **long term climate change** which exists in the geological record.

In this regard, U.S. geologist Bill Ruddiman has recently shown that greenhouse gases (carbon dioxide, methane) which are expected to have declined in the atmosphere since the last glaciation instead show increasing trends from ~8,000 and 5000 years ago, respectively. He interprets these reversals as human-caused, resulting from the clearing of trees and development of agriculture.

Ruddiman's work has shifted the focus of the climate change debate irrevocably. The key question now is not "is industrial-age, human-caused global warming occurring?", but rather "are we sure that the human effect on climate over the last 8,000 years has helped to prevent the occurrence of another glaciation?" Should the answer to that question be "yes", then it prompts the further question: "do we wish to maintain the human warming effect, or instead to counteract it and allow Earth's climatic cycle to drop back into its next (natural) glacial episode?".

A typical computer model projection predicts that implementing the **Kyoto Protocol** would reduce an expected temperature increase of 2.1° C by 2100 to 1.9° C instead. Put another way, the world would postpone until 2100 a temperature increase which would otherwise occur in 2094. Adhering to the Kyoto Protocol will therefore have a negligible effect on reducing climatic warming.

Several trillion dollars, which is the estimated cost of the Kyoto accord, seems a lot of money to spend to buy just six years of breathing space. As Bjorn Lomborg never tires of pointing out, a better use of this money would be to spend it alleviating some of the much more acute global problems, such as starvation, sanitation and health services in less privileged countries.

Contrary to strong public belief, the effects of **increasing carbon dioxide** in the atmosphere are generally beneficial. Enhanced plant growth has many obvious benefits,

amongst them increased natural vegetation growth in general, and increased agricultural production in particular. And to maintain or slightly increase planetary temperature is also very much a global good if -- as Ruddiman and other scientists assert -- the human production of greenhouse gases is helping to hold our planetary environment in its historic, benignly warm, interglacial mode.

This news has yet to percolate up to the policy level within western governments, most of whom are still preoccupied with the politics of the Kyoto protocol, including in many cases advanced plans for carbon trading taxes on energy consumption. Even worse, however, major government science agencies, or senior scientists such as the U.K.'s Sir David King, continue to propagate the view that increases in atmospheric carbon dioxide are, of themselves, environmentally harmful.

There is an urgent need for governments to shake themselves free of the partial advice provided by environmental advocacy groups and government science agencies, all of whom have a strong and often undeclared self-interest in most environmental matters. Nowhere is this need greater than in the debate over climate change.

See also:

<http://myprofile.cos.com/glrmc>

Professor Ian Plimer, Hon. FGS, FATSE, FAIG, has been Professor of Geology at the School of Earth Sciences at the University of Melbourne since 1991. His career has involved teaching, research, consultancy, and mineral exploration, and Ian now sits as Director on the boards of several mining companies. Ian is the author of over 100 research papers, and was the 1994 winner of the Michael Daley Award for Science, Technology and Engineering Journalism. In 1995 he won the ABC Eureka Prize for the Promotion of Science. He is the author of a book on creationism in Australia: *Telling Lies for God* (Random House, 1994).

Email: i.plimer@earthsci.unimelb.edu.au

Phone: (0061) 0421-089-651

*For at least the last 2500 million years, the continents have been pulled apart and stitched back together. Every time the continents are pulled apart, huge quantities of volcanic H₂O, CO₂ and CH₄ are released into the atmosphere and greenhouse conditions prevail. When continents stitch together, mountain ranges form. Mountains are stripped of soils, new soils form and remove CO₂ from the atmosphere, these soils are stripped from the land and the CO₂ becomes locked in sediments on the ocean floor. When atmospheric CO₂ is low, glaciation occurs. **Large climate cycles** can be related to plate tectonics.*

*The zenith of the **last glaciation** was 18,000 years ago. Sea level was 130 metres lower than today, temperature was 10-15^o C lower than today and there were very strong winds. The northern hemisphere was covered by ice to 38^o N, with more northern areas such as Scandinavia covered by up to 3 km of ice.*

Humans lived very short lives around the edge of ice sheets. Australia was scoured by anti-cyclonic winds that deposited sand dunes and carried sea salt spray to be trapped in the inland basins. Tasmania and parts of the south eastern highlands of Australia were

covered in ice. Sea level was so low that Aborigines walked to Tasmania from mainland Australia.

Changes in **atmospheric temperature** in the 20th century can be considered small and slow from the perspective of the climatic changes which have occurred over historical and geological time. A 24-year global coverage of satellite atmosphere temperatures shows only modest warming in the northern hemisphere and a slight cooling in the southern hemisphere. Temperature measurements from balloons agree with the satellite measurements for the period of overlap.

Because greenhouse warming is a phenomenon of the atmosphere, significant changes should have occurred but in fact have not been recorded.

Underpinning the global warming and climate change mantra is the imputation that humans live on a non-dynamic planet. On all scales of observation and measurement, sea level and climate are not constant. **Change is normal** and is driven by a large number of natural forces. Change can be slow or very fast. However, we see political slogans such as Stop Climate Change or government publications such as Living with Climate Change, demonstrating that both the community and government believe that climate variability and change are not normal.

The nature of science is scepticism, and science encourages argument and dissent. Scientific evidence is derived from reproducible observation, measurement, experiment and calculation. Evidence in geology shows the complex and fascinating intertwining of evolving natural processes on a dynamic planet.

This process has not yet taken place fully in discussions of climate change. **Greenhouse propoganda** on climate change is ignorance of the history of our dynamic planet hiding behind unscientific political policy.

See also:

<http://www.google.com/search?sourceid=navclient&ie=UTF-8&q=ian+plimer>
http://www.amonline.net.au/eureka/science_book/2002_winner.htm

Recommended Reference Material on Climate Change

Reading

Boehmer-Christiansen, S. & Kellow, A.J. 2002 *International Environmental Policy - Interests and the Failure of the Kyoto Process*. Edward Elgar Pub., Northampton, Massachusetts, 214 pp. (ISBN 18406481 8X th55.00).

Burroughs, W. (ed.) 2003 *Climate into the 21st Century*. World Meteorological Organisation & Cambridge University Press, 240 pp.

Essex, C. & McKittrick, R. 2002 *Taken by Storm. The Troubled Science, Policy and Politics of Global Warming*. Key Porter paperback (ISBN 1 55263 212 1, available from Amazon CANADA).

Gerhard, L.C. et al. 2001 *Geological Perspectives of Global Climate Change*. American Association of Petroleum Geologists, Studies in Geology #47 (ISBN 0 89181 053 6, available from AAPG website).

Gray, V. 2002 *The Greenhouse Delusion A Critique of "Climate Change 2001"*. Multi-Science Publishers (ISBN 0 906522 14 5 • pp. 95 • £11.50).

Houghton, J.T. et al. 2001 *Climate Change 2001: the Scientific Basis*. Intergovernmental Panel on Climate change, Working Group 3, Third Assessment Report, Cambridge University Press, 881 pp.

Kininmonth, W. 2004 *Climate Change: A Natural Hazard*. Multi-Science Publishers (ISBN 0 906522 26 9 • pp. viii + 208 • £39).

National Research Council (U.S.) 2002 *Abrupt Climate Change - Inevitable Surprises*. National Academy Press, Washington, D.C., 230 pp. (ISBN 0 309 07434 7).

Ruddiman, W.F. 2001 *Earth's Climate, Past and Future*. Freeman & Company, New York, 465 pp.

Websites

www.john-daly.com/http://www.john-daly.com (considered contrarian viewpoints)

www.co2science.org (analysis and comment on climate-related issues)

academic.emporia.edu/aberjame/ice/lec19/holocene.htm#med_opt (climate over the last 10,000 years)

www.pages.unibe.ch/products/newsletters/nl2000_1.pdf (PAGES - past global climate changes)

www.warwickhughes.com (considered contrarian viewpoints)

www.warwickhughes.com/hoyt/climate-change.htm (Doug Hoyt's critical analysis)

www.co2andclimate.org/climate (analysis and comment on climate-related issues)

www.lavoisier.com.au (discussion and links on greenhouse)

www.uoguelph.ca/~rmckitri/research/trc.html (critical analysis of the famous hockey-stick graph)

www.scientific-alliance.org/events_items/past_events/19jandebate.htm (environmental analyses)

ffden-2.phys.uaf.edu/212_fall2003.web.dir/Beth_Caissie/Milankovitch.htm (summary of Milankovitch theory)

www.bom.gov.au/announcements/media_releases/ho/20030320a.shtml (John Zillman World Climate address)

www.numberwatch.co.uk (John Brignell on the unsound use of public statistics)

mclean.ch/climate/global_warming.htm (John McLean critical summary and links on global warming)

www.cspg.org/deFreitas_climate.pdf (Chris de Freitas on CO2)

wwics.si.edu/index.cfm?fuseaction=wq.essay&essay_id=33083 (essay by Jack Hollander)