

Epistemic Integrity
and Quality of Information
A Refutation of IPCC's Term
'Radiative Forcing'
with Thermodynamics
of Atmospheric Processes

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by

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Epistemic Integrity and Quality of Information



A refutation of IPCC's term 'radiative forcing' with thermodynamics of atmospheric processes

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Abstract

This is a refutation of the International Panel for Climate Changes term being developed 'radiative forcing' based on my education and further research into the topic of climate change and thermodynamics of atmospheric processes. My background is in environmental engineering, post graduate science, conservation land and water management, permaculture and community food growing. I have been reading and critiquing scientific literature as well as online discussions for the past two decades and wish to share what I understand about the science of CO2 warming and the impacts of climate capitalism and the climate industrial complex.

The term 'Radiative Forcing' being developed to include negative forcing from clouds and aerosols is arguable not measurable and even one turbulent fluid cannot currently be modeled. Over a hundred climate models costing tens of millions of dollars arriving at different results is not reproductive evidence therefore not science. Only radiation, conduction, convection, and latent heat of vapourisation and condensation exist in thermodynamics heat transfer. Due to the first law of thermodynamics conservation of energy a trace gas in the cooler air that absorbs a tiny fraction of the weak up going infrared thermal radiation cannot further heat the already hotter more than the powerful and penetrating solar radiation already has. Even water vapour only the heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. Due to the second law of thermodynamics heat transfer is irreversible from hotter to cooler object. One can see the breath on a cold morning or a hot air balloon. One can also get sunburn or cook an egg on hot surfaces but not from the weak IR in the cooler air.

Bare earth and the built environment including solar and wind farms do raise surface temperature amplitude warming air mass near surfaces via conduction which is removed by convection. Solar radiation heats surfaces in the first instance warming air mass near surfaces via conduction which is removed by convection. For dry surfaces there is sensible heat flux and moist surfaces there is latent heat flux. Sensible heat flux, latent heat flux, lapse rates, low pressure, atmospheric circulation, convection, clouds and rainfall are all cooling processes.

Some major drivers of climate change includes changes in solar, the magnetosphere, cosmic radiation, magnetic polar shift, Rossby waves, geothermal, planetary seismic tidal pulls, gravitational waves, core angular momentum, length of day, Milankovich cycles, Asteroids, and Volcanoes. Bare earth and the built also can make heat waves more severe.

The trillion-dollar carbon tax, mining and development cause is doing much environmental damage including pristine environmental and our most important biodiversity areas. From worldwide damming, global deforestation for biomass, biofuels, and balsa wood, an estimated five time new minerals mining, worldwide fracking transition fuel, and functional habitat loss for mega solar and wind farms and associated mega transmissions. The fossil fuel and climate lies for pricing and taxation has also increased the costs of living sending manufacturing overseas, businesses to close, and household poverty.

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Glossary of terms and concepts

Radiation- emission of energy electromagnetic waves emitted from the Sun.

Conduction- process when heat or electricity is directly transferred from one substance to another due to the temperature difference.

Convection- the movement caused within a fluid by the tendency of hotter and therefore less dense material to rise, and colder, denser material to sink under the influence of gravity, which consequently results in transfer of heat.

Latent heat of vaporisation- also known as enthalpy of vaporization or heat of evaporation, is the amount of energy that must be added to a liquid substance to transform a quantity of that substance into a gas.

Latent heat of condensation-is the amount of heat required to convert a gas to a liquid that releases heat to space.

Sensible heat- a form of energy emitted into the atmosphere or absorbed. Sensible heat is the energy needed to raise the temperature of a substance.

Latent heat- is the energy needed to overcome the intermolecular forces to trigger a phase change.

Radiative Forcing- The IPCC definition is the instantaneous RF refers to an instantaneous change in net (down minus up) radiative flux (shortwave plus longwave; in $W\ m^{-2}$) due to an imposed change. This forcing is usually defined in terms of flux changes at the top of the atmosphere (TOA) or at the climatological tropopause, with the latter being a better indicator of the global mean surface temperature response in cases when they differ.

Photosynthesis- the process by which plants and some other organisms use sunlight to synthesize nutrients from carbon dioxide and water. Photosynthesis in plants involves the green pigment chlorophyll and generates oxygen as a by-product.

Transpiration- the process by which plants give off water vapor through the stomata in their leaves. It is evaporation of water from the plants leaves.

Epistemic integrity- is a property of practices resulting in certain statements. More specifically, we define the epistemic integrity of a practice as a function of the degree to which the statements resulting from this practice are deceptive. The more deceptive these statements, the lower the epistemic integrity of the practice.

Explicandum- the fact, thing, or expression which is to be explained or explicated.

Explicatum- Explication can be regarded as a scientific process which transforms and replaces "an inexact prescientific concept" (which Carnap calls the explicandum), with a "new exact concept" (which he calls the explicatum).

Explication- the process of analysing and developing an idea or principle in detail.

Exposition- a comprehensive description and explanation of an idea or theory.

Introduction

The science of Carbon Dioxide warming has been hotly debated and divided our community since the establishment of the International Panel for Climate Change (IPCC) in 1988 by the Bush Administration. As part of the trillion-dollar carbon tax on the whole supply chain are green funds and many scientific research institutions, non-government organisations, media, scientific organisations, and community are influenced by this global taxation and development initiative.

Since the IPCC was formed, they have been developing a term 'radiative forcing' or back radiation to include negative forcing from certain aerosols and clouds as well and there many factors to consider that are difficult to measure, and with many uncertainties. Some one hundred climate models costing tens of millions of dollars have attempted to quantify future projections of climate however do not arrive at the same results and therefor is not reproductive evidence and is not science. The term 'radiative forcing' does not appear in thermodynamics textbooks and thermodynamics of atmospheric processes can easily refute the term radiative forcing. Radiative forcing is non measurable due to thermals and mixing and interactions between the troposphere and stratosphere and even one turbulent fluid cannot be currently modelled using the Navier-Stokes equations. Climate science is a made-up science, the science of CO₂ warming is really a thermodynamics of atmospheric processes phenomenon that is taught in engineering fields and physics.

As a lay environmental engineer and scientist who does my own private research and online discussion forums for the past decade or more, no scientists that I have discussed CO₂ warming hypothesis with or peer reviewed research is able to provide empirical evidence that CO₂ increases temperature and are unable to refute the thermodynamics of atmospheric processes.

In this book I attempt to communicate to the readers about epistemic integrity of science and quality of information as well as the thermodynamics of atmospheric processes, global average temperature, scientific experiments, real drivers of climate changes, and an overview of the impacts that climate ideology is having on our environments and economies. I hope this will boost our understanding and even make some of these organisations and people accountable for misinformation and misleading the public. It appears many people have been brainwashed by all the propaganda and it is very concerning the climate industrial complex is doing much environmental damage including our most important biodiversity areas and pristine environments. Also a concern is the cost of living, fuel, energy, food etc now that is very much interrelated to the post modern resentment ridden ideology associated with the global taxation, mining and development initiative.

PART 1

Epistemic Integrity and Quality of Information

The International Panel for Climate Change (IPCC) is a political organisation established by politicians, corporations, scientists, and activists. A unique scientific organisation where governments influence what is published. Are the institutions, oligarchs, and activists open to change attitudes and perceptions and accept science advance based on new awareness and sensibility or are vested financial and political interests more important? The information age is now giving way to the communication age. There is an abundance of data, and getting the right information to where it can be most useful is important.

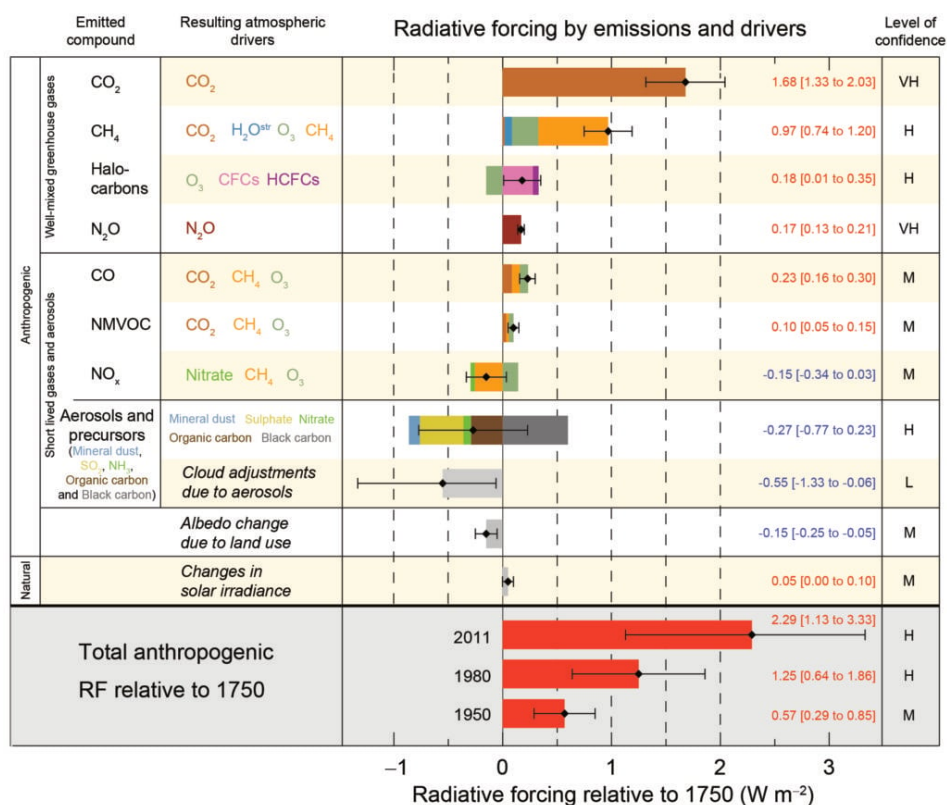
Epistemic integrity is based on the product of deceptiveness. Scientific expertise and its epistemic authority can be corrupted by financial and political non-epistemological interests ie. Hypothesis acceptance, fast tracking development, global taxation of the whole supply chain. Scepticism, empiricism, and rationalism epistemologies are important for science based on empirical evidence, observations, experience, experiment, and verification rather than relying on a foundationalist epistemology beliefs that rulers are always right, coherentism epistemology beliefs based on other sets of beliefs eg. Santa Claus, pragmatism based on usefulness, and idealism not derived from experience. In order for science to be truthful and exact there should be reproductive empirical evidence, and backed by observations, experience, experiments, and verifiable however the science of CO2 warming does not.

Rudolf Carnap's method of reconstruction comprises both analysis of given meanings and stipulation of new meanings. Explication of a pre-scientific, inexact concept, the explicandum, can be replaced with an exact scientific concept, the explicatum. Carnap applies four principles of explication similarity, exactness, fruitful, and simplicity. Ludwig Wittgenstein's picture theory of language, which evolved into what is now called the verification principle by A.J. Ayer is the basic idea is that for statements to be logical and useful they must refer to verifiable facts. Epistemic integrity of scientific theories can be upheld by means of declarations, definitions, and expositions.

PART 2

Refutation of radiative forcing with thermodynamics of atmospheric processes

The International Panel for Climate Change (IPCC) was established in 1988 and has been developing the term ‘radiative forcing’ or ‘back radiation’ that is how much energy is coming from the sun compared to how much is leaving. The IPCC have been developing the term to include negative forcing also from certain aerosols and clouds and there are many factors that affect the balancing act such as properties of gases, clouds, and ice, that each have levels of uncertainty and difficult to measure.



Source: IPCC WG1 Summary for policymakers figure SPM 5 (<https://www.ipcc.ch/report/ar5/wg1/summary-for-policymakers/figspm-05/>)

IPCC’s definition of radiative forcing reads.

In principle, observations of the climate response to a single factor could directly show the impact of that factor, or climate models could be used to study the impact of any single factor. In practice, however, it is usually difficult to find measurements that are influenced by only a single cause, and it is computationally prohibitive to simulate the response to every individual factor of interest. Hence

various metrics intermediate between cause and effect are used to provide estimates of the climate impact of individual factors, with applications both in science and policy. Radiative forcing (RF) is one of the most widely used metrics, with most other metrics based on RF.

Admittedly radiative forcing is not measurable, many factors and uncertainty, and relies on metrics and computational modelling to estimate radiative forcing and projected future climate. Dr. Shiva is offering a million dollars to anyone who can solve the Navier-Stokes equations for even one turbulent fluid. It defies thermodynamics for a trace gas to beam a tiny fraction of the weak IR up going thermal radiation from the TOA further heating the already hotter surface.

The term being developed radiative forcing can be refuted with thermodynamics of atmospheric processes and arguably isn't even measurable due to thermals and mixing as well as interactions between the troposphere and stratosphere. Even one turbulent fluid is currently not able to be modelled using the Navier-Stokes equation. Also, over 100 climate models arriving at different results is not reproductive evidence therefore not science.

Navier – Stokes Equation

$$\frac{\partial \mathbf{u}}{\partial t} = \nu \nabla \cdot (\nabla \mathbf{u}) - (\mathbf{u} \cdot \nabla) \mathbf{u} + \mathbf{F}_{body} - \frac{1}{\rho} \nabla p$$

viscous drag convection gravity pressure

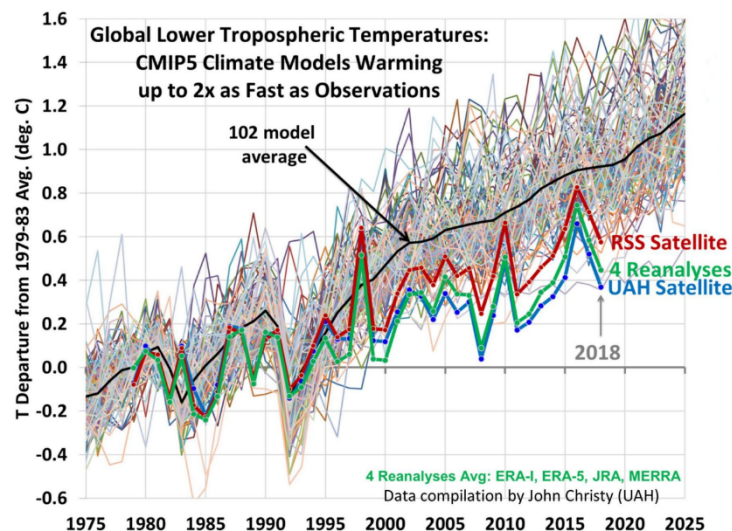
mass conservation velocity density pressure

$$\nabla \cdot \mathbf{u} = 0$$

The Navier-Stokes equations for incompressible fluid flow

Reference: https://www.researchgate.net/figure/The-Navier-Stokes-equations-for-incompressible-fluid-flow_fig1_220423381


Climate Models




Source: <http://www.drroyspencer.com/2019/12/cmip5-model-atmospheric-warming-1979-2018-some-comparisons-to-observations/>

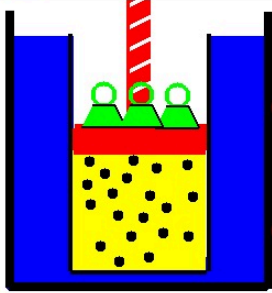
1. First Law of Thermodynamics

The first law of thermodynamics conservation of energy, energy cannot be created or destroyed only transferred from one object to another. Atmospheric CO2 is on average about 0.04% of air doesn't generate heat it only absorbs a tiny fraction of the weak up going infrared thermal radiation. H2O which exists from 0-4% absorbs most of the weak up going Infrared thermal radiation and only increases heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. At solar noon when the weak up going IR thermal radiation is highest of which CO2 at 0.04% absorbs a tiny fraction, the cooler air adds no extra heat and does no work to the already hotter surface and therefore does not increase the internal energy of surface more than the powerful and penetrating solar radiation already has.



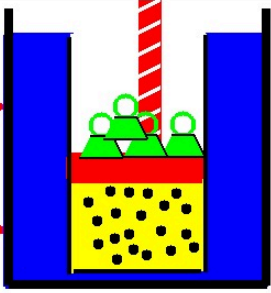
First Law of Thermodynamics





State 1

Q
Heat Transfer
 W
Work




State 2

$E = \text{Internal Energy}$
 $E_2 - E_1 = Q - W$


Any thermodynamic system in an equilibrium state possesses a state variable called the internal energy (E). Between any two equilibrium states, the change in internal energy is equal to the difference of the heat transfer into the system and work done by the system.

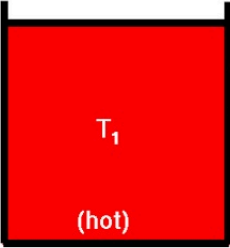
2. Second Law of Thermodynamics

The second law of thermodynamics heat transfer is 'irreversible' from hotter object to cooler object unless energy is supplied to reverse the direction of heat flow. Hot things always cool unless you do something to stop them. Energy can flow from cold to hot is if work is done such as a refrigerator.



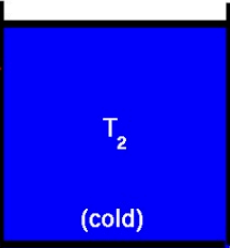
Second Law of Thermodynamics





T_1
(hot)

ΔQ
Heat Transfer



T_2
(cold)

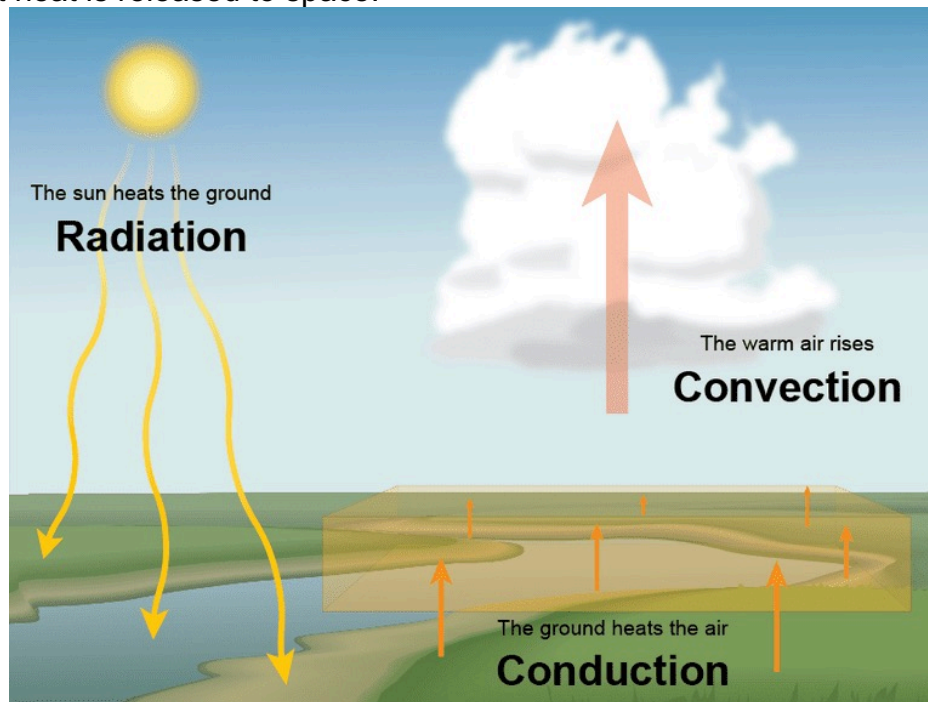
$\Delta S = \text{Entropy} = \frac{\Delta Q}{T}$

There exists a useful thermodynamic variable called entropy (S). A natural process that starts in one equilibrium state and ends in another will go in the direction that causes the entropy of the system plus the environment to increase for an irreversible process and to remain constant for a reversible process.

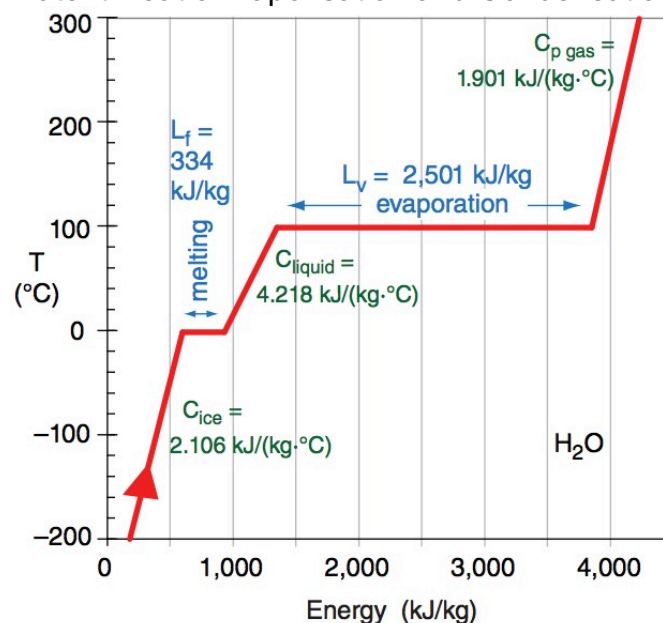
$S_f = S_i$ (reversible) $S_f > S_i$ (irreversible)

3. Modes of Heat Transfer

There are four modes of heat transfer, namely, radiation, conduction, convection, and latent heat of vaporisation and condensation. The solar radiation heats surface's in the first instance warming air mass near surfaces via conduction which is removed from convection. It takes an enormous amount of energy to evaporate water and evaporation cools the air and surfaces. Water vapour is light and rises removing latent heat and condensation into clouds and coalescence into precipitation where the latent heat is released to space.



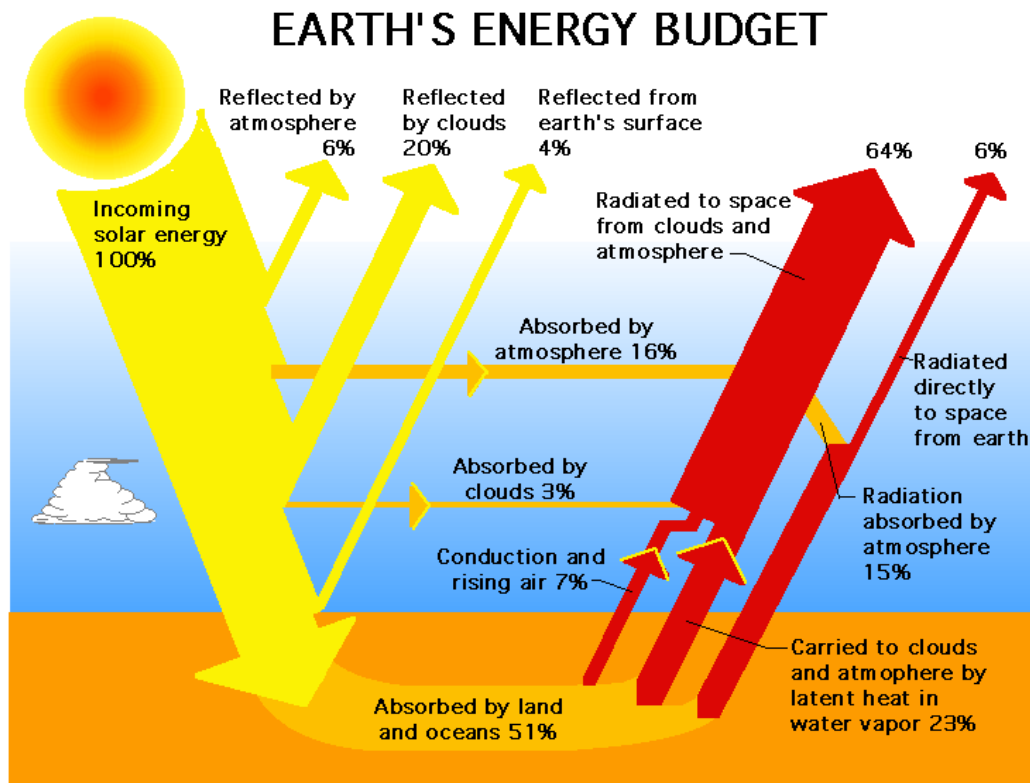
Latent Heat of Vaporisation and Condensation



Source: <https://pressbooks-dev.oer.hawaii.edu/atmo/chapter/chapter-3-thermodynamics/?fbclid=IwAR0rhAT3XOI-HGcapLo9klb8pLWcF5qMNIHjrxkgKIC2rLuNfFwbvuNYr38>

4. Earth Energy Balance

From NASA's original Earth Energy Budget one can observe only radiation, conduction, and convection exist in thermodynamics heat transfer. Given the second law of thermodynamics heat transfer is irreversible there is no radiative forcing or back radiation represented on the original NASA Earth Energy Budget.



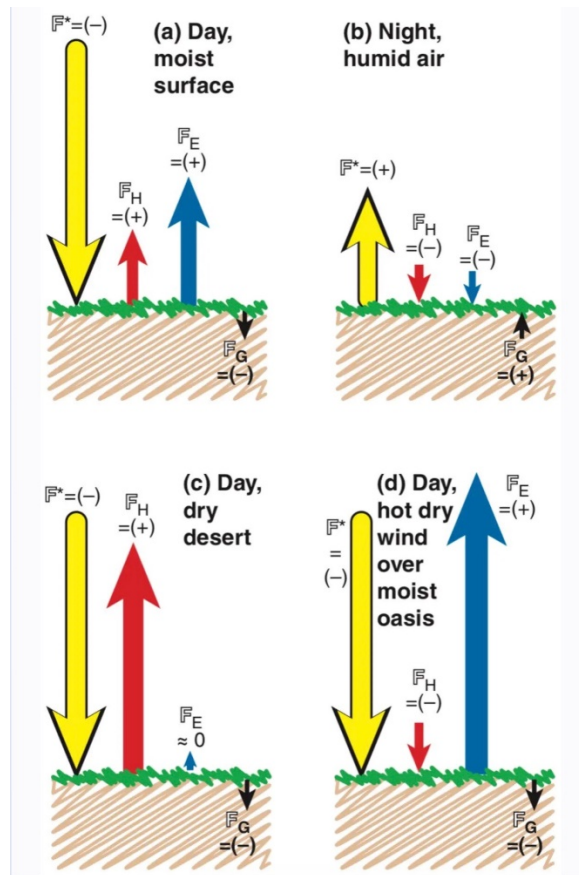
Source: http://www.nasa.gov/audience/forstudents/5-8/features/F_The_Role_of_Clouds.htm

For dry surfaces there is sensible heat flux, as warmed air mass is less dense it rises removing heat. For moist surfaces there is latent heat of vaporisation and condensation. Water vapour is light and rises removing latent heat which is released to space on condensation and precipitation.

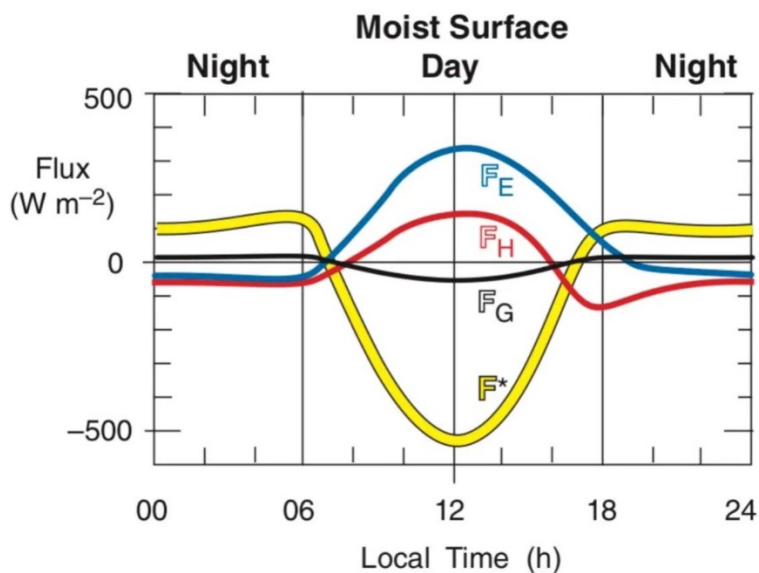
Earth's surface budget equation fluxes are defined as positive for heat moving upwards.

F^* = the net radiation between the surface and atmosphere, defined above;
 F_H = effective surface turbulent heat flux (sensible heat flux, SH);
 F_E = effective surface latent heat flux, caused by evaporation or condensation (latent heat flux, LH); and
 F_G = molecular heat conduction to/from deeper below the surface, basically heat being conducted from nearby molecules.

All of these fluxes have to balance. $0 = F^* + F_H + F_E - F_G$



Source: <https://pressbooks-dev.oer.hawaii.edu/atmo/chapter/chapter-3-thermodynamics/>

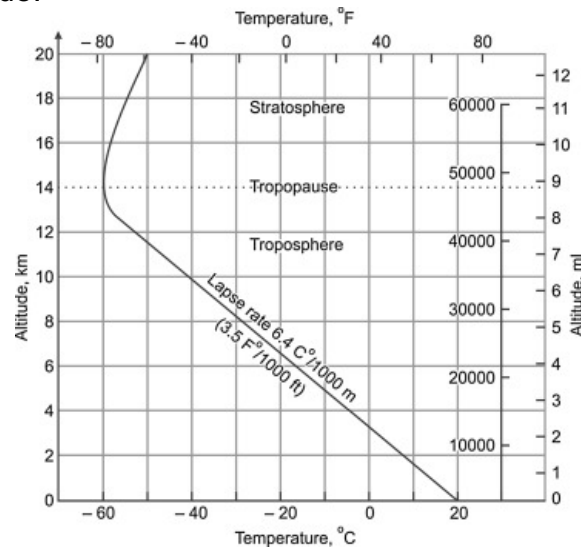


Source: <https://pressbooks-dev.oer.hawaii.edu/atmo/chapter/chapter-3-thermodynamics/>

As you can see from the graphical representations above that sensible heat flux for dry surfaces and latent heat flux for moist surfaces are cooling processes that far exceeds the small amount of proposed downwelling radiation around solar noon.

5. Adiabatic Lapse Rates

Due to convection there is dry adiabatic and wet adiabatic lapse rates as air mass gets cooler with altitude.



Source: <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/adiabatic-lapse-rate>

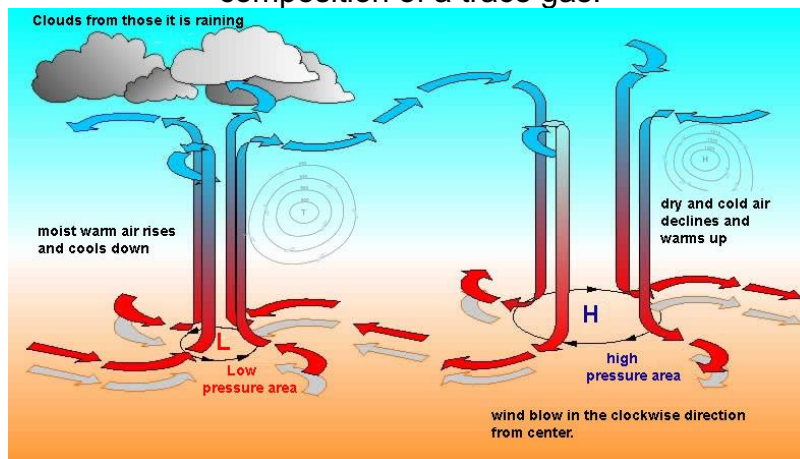
Adiabatic lapse rates are the change in temperature with altitude a parcel of air without gaining or losing any heat to the surrounding environment. Dry adiabatic lapse rate assumes a dry parcel of air cools 3C/100m in altitude. Wet adiabatic lapse rate is as a parcel of air rises H₂O condenses and releases heat and warms the air around it therefore the parcel of air cools more slowly as it rises in altitude approximately 6C/1000m. (<https://www.sciencedirect.com/topics/earth-and-planetary-sciences/adiabatic-lapse-rate>)

The question is how would there be dry and wet adiabatic lapse rates if no convection? Heat transfer is mainly due to convection that far exceeds any proposed downwelling radiation or radiative forcing around solar noon when the sun is highest.

6. Ideal Gas Law

In the Earth's atmosphere temperature is generally proportional to pressure given by the ideal gas law $PV=nRT$ under atmospheric conditions where P is pressure, V volume, n is amount of a substance, R is ideal gas constant, and T is temperature. Climate is weather over time which is dictated by pressure systems not atmospheric composition of a trace gas. Heatwaves and droughts are from high pressure characteristic of dry weather and clear skies, low lying areas, as well as Foehn or Catabatic winds downhills. Pressure induced thermal enhancement does raise air temperature. While difficult to model the behaviour of gases the ideal gas law helps simplify the behaviour of gases. High pressure reduces relative humidity preventing clouds and allowing much insolation to reach the surfaces. Water vapour has a regulatory and cooling function through evaporation cooling, low pressure atmospheric circulation and convection overturning, condensing into clouds and rainfall.

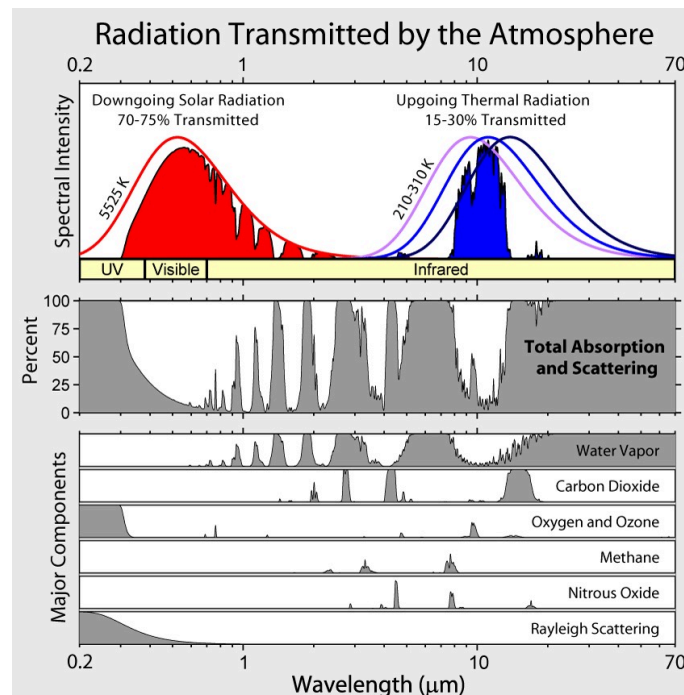
Climate is weather over time which is dictated by pressure systems not atmospheric composition of a trace gas.



Source: <https://content.meteoblue.com/en/research-education/educational-resources/meteoscool/large-scale-weather/high-low-pressure>

7. Water Vapour increases the heat index not air temperature

Water vapour only increases the heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. If water vapour is 0-4% of air then how can a trace gas in parts per million or parts per billion increase temperature? It gets far hotter in cloudless deserts along the horse latitudes subtropical high-pressure ridge than it does along the moist equatorial where the natural greenhouse effect is highest. It also gets colder at night as clouds reducing incoming solar radiation by day and slows the rate of heat loss at night.

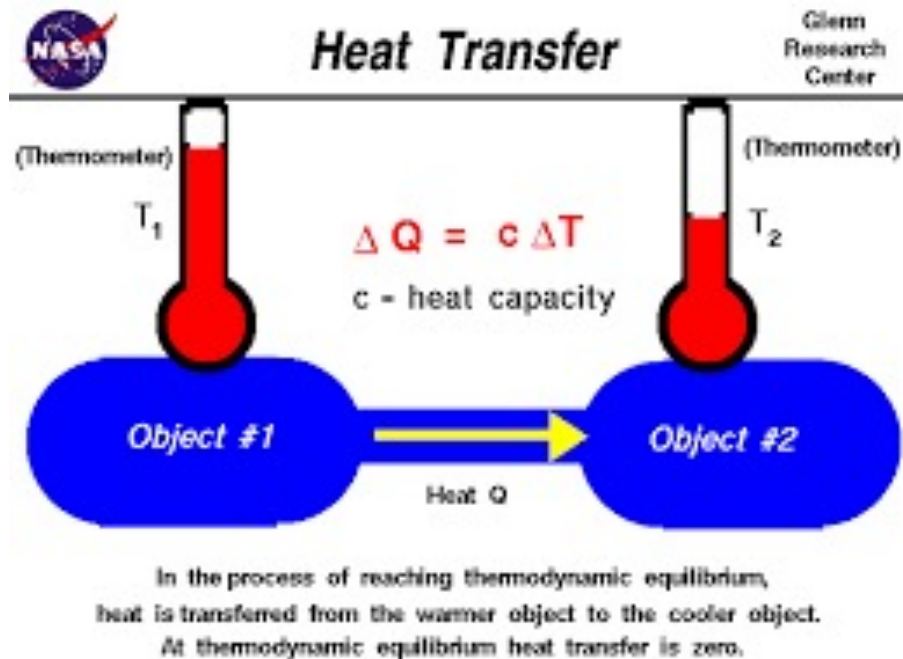


Source: [Robert A. Rohde](#)

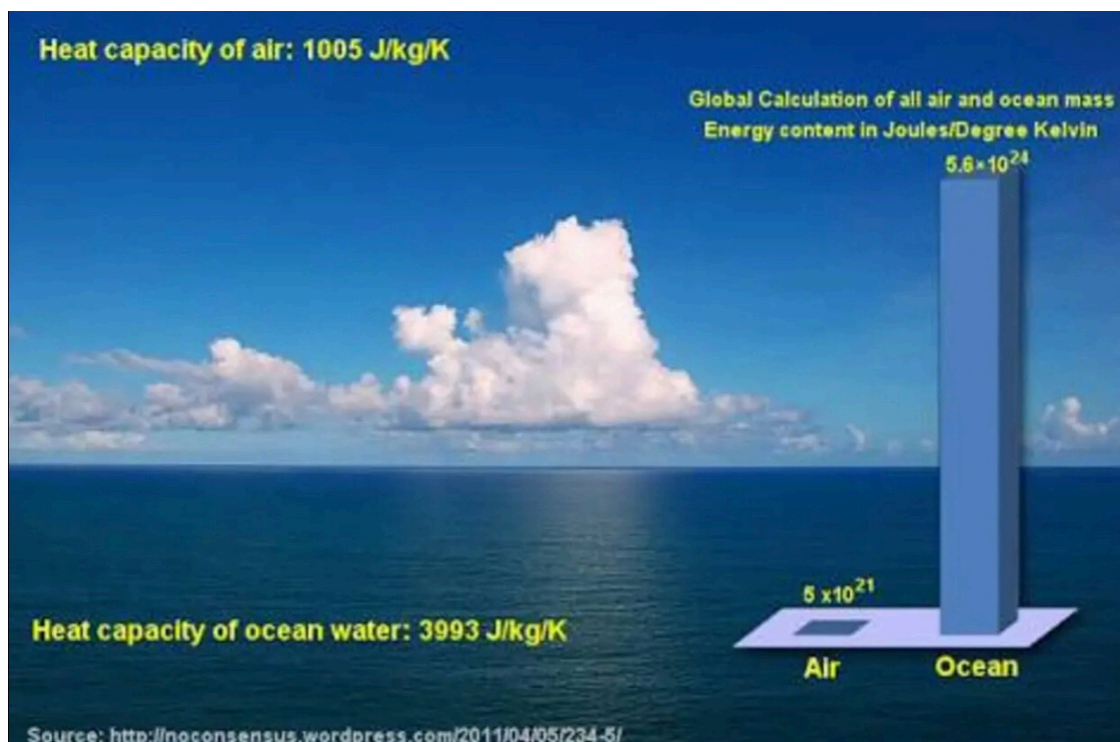
https://commons.wikimedia.org/wiki/File:Atmospheric_Transmission-ru.svg

8. Specific Heat Capacity of air vs water

Water has a high specific heat capacity and air a low specific heat capacity. It would take 1kg of air 4C warmer than water to heat one litre of water by 1C. The oceans albedo is only 6% of incoming solar radiation is reflected of which CO2 only absorbs a tiny fraction.

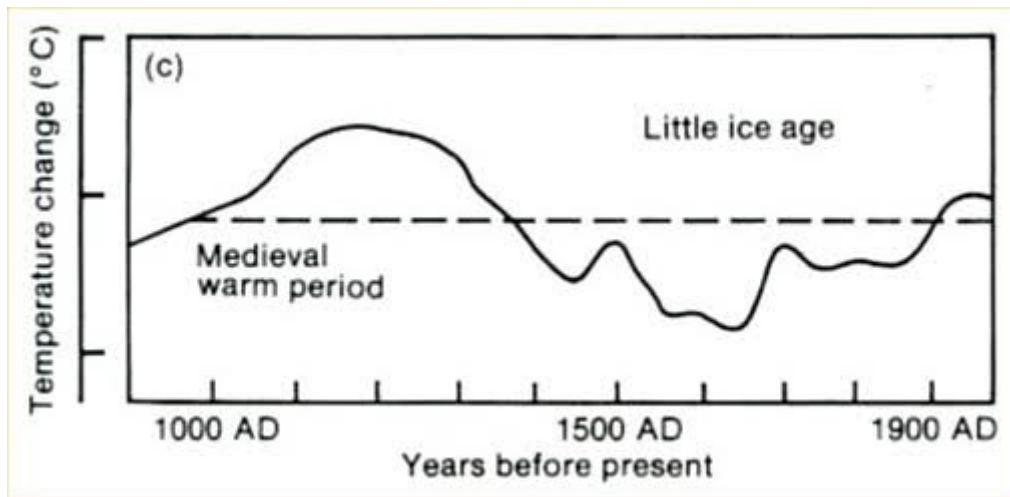


At solar noon when the Sun is highest and reflected IR 'up going' thermal radiation is highest (of which CO2 at 0.04% absorbs a tiny fraction), how does the cooler air further heat the already hotter surface more than the powerful and penetrating solar radiation already has?

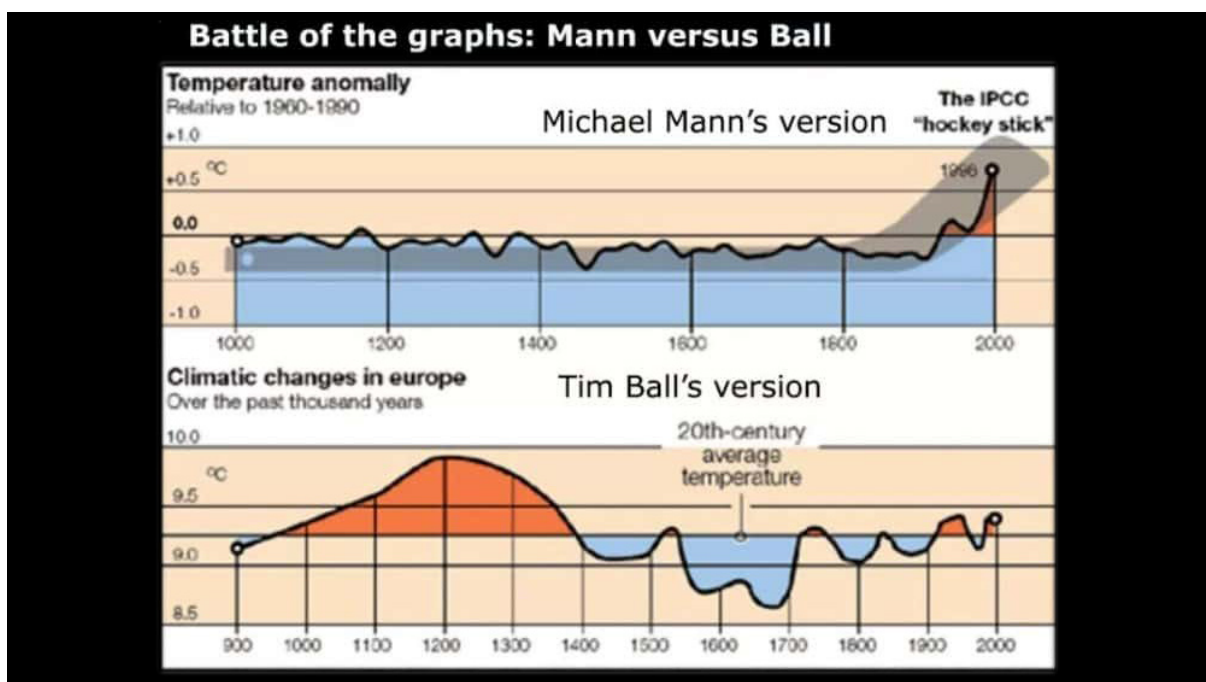


9. Historical interpretations of climate

IPCC's first graph from 1990 shows the Medieval Warm Period MWP and Little Ice Age LIA. From this graph it appears the MWP was warmer than the current warm period. Historical data is proxy data over large time periods and areas and is mainly from the said Northern Hemisphere. To verify if the MWP was warmer there is evidence that the Vikings grew Barley in Greenland as well as Viking artefacts being found from a melting glacier in Norway from the current warming.

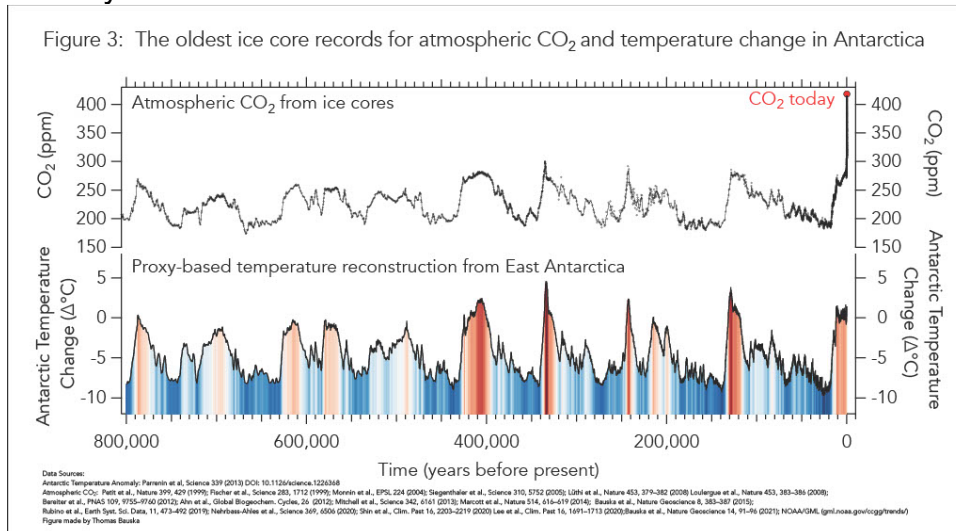


Michael Mann is scientist after grants attempted to reconstruct the past by eliminating the MWP and LIA to demonstrate man-made warming in what is called the Hockey Stick Graph. Mann took Ball to court and was unable to provide evidence how he arrived at the Hockey Stick.



10. What comes first the chicken of the egg? CO2 lags temperature

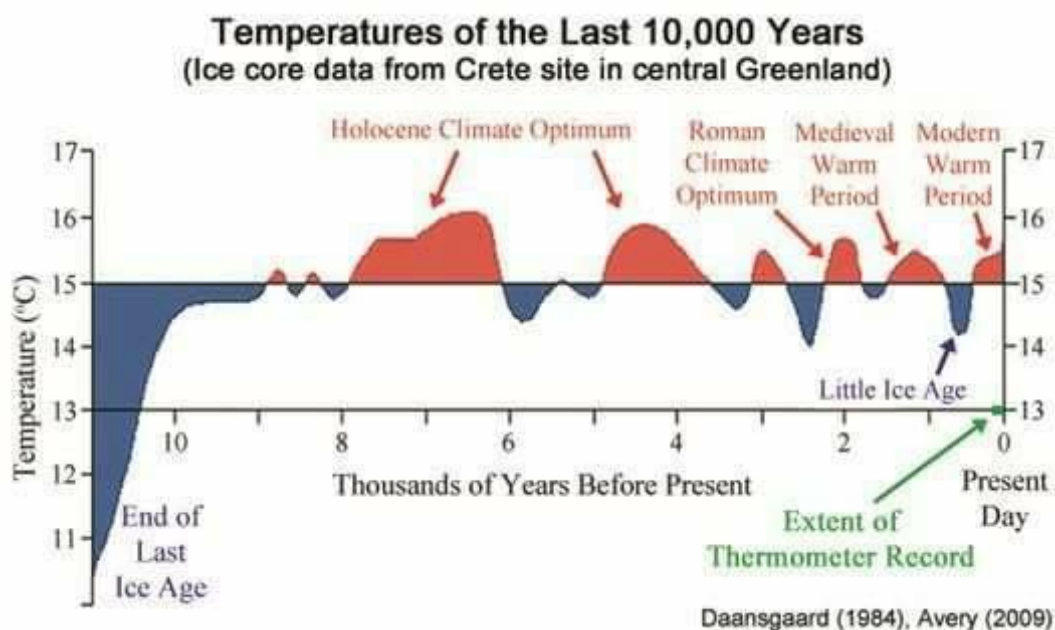
From the ice core records one can observe glacial periods interspersed roughly every 100,000 years and interglacial warm periods that last 11,000 years periodically for the last 800,000 years of ice core records. The graph below is from the British Antarctic Survey.



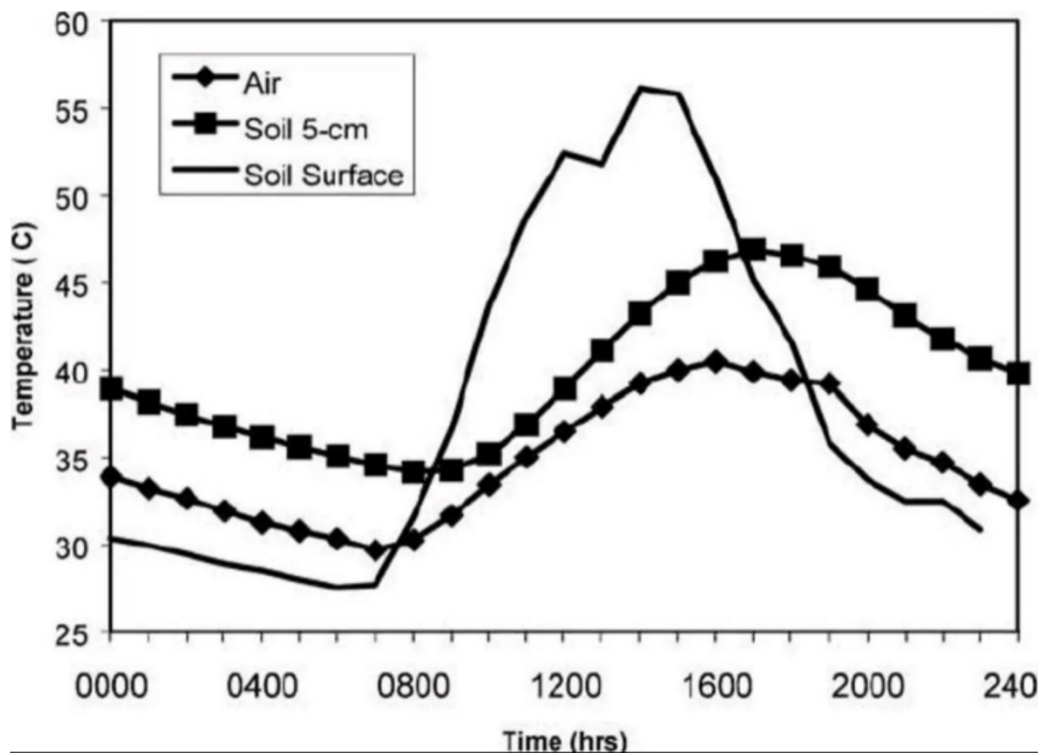
One can also observe that CO₂ lags temperature in a 800 (+22) year time lag is observed in some of the records but not all. The explanation for this phenomenon is as the oceans warm they degas and the extra greenhouse gases amplify and maintain the warmth however this hypothesis is unfounded and no actual empirical evidence exists to prove CO₂ does increase temperature.

https://web.mit.edu/angles2008/angles_Emanuel_Quiroz.html#:~:text=This%20correlation%20is%20evident%20in,certain%20periods%20of%20~5%2C000%20years

The ice core data from Greenland clearly shows periodic warm periods and cool periods throughout the past 10,000 years.

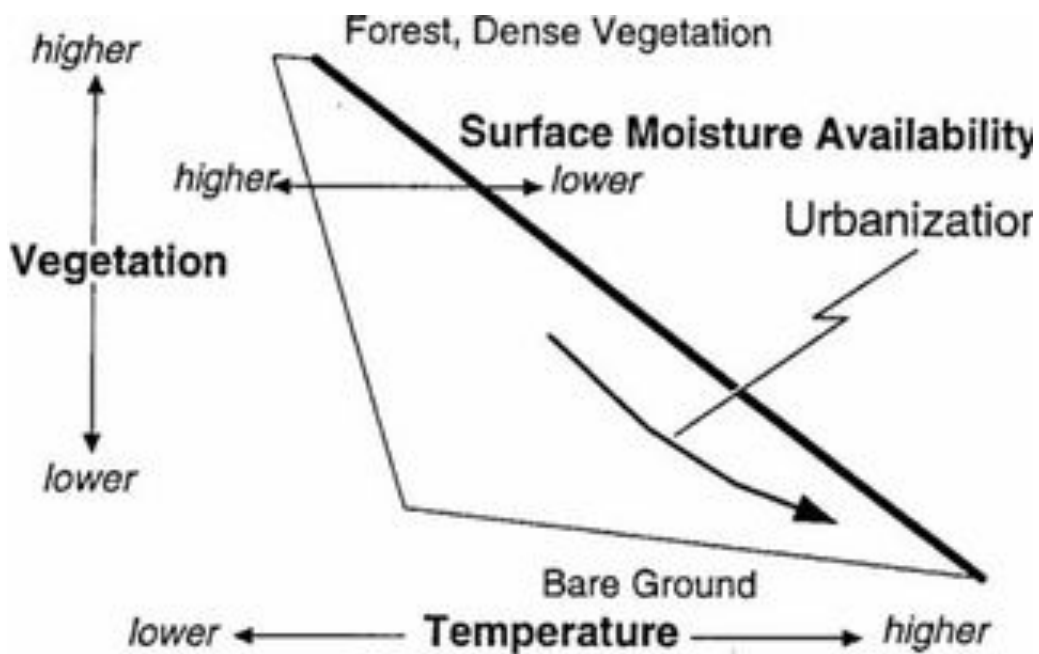


From the graph below one can observe that the surfaces heats more than the air and the air follow suit.



Source: unknown

From the graph below one can observe that lack of surface moisture availability, urbanisation, and bare earth does increase surface temperature amplitude.

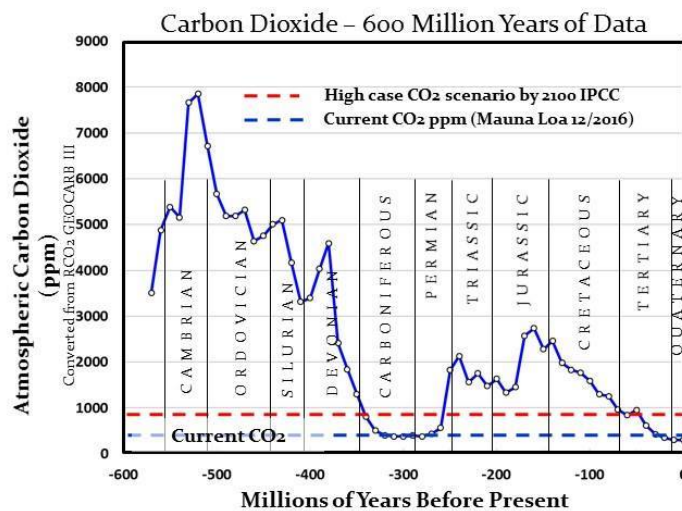


Source: unknown

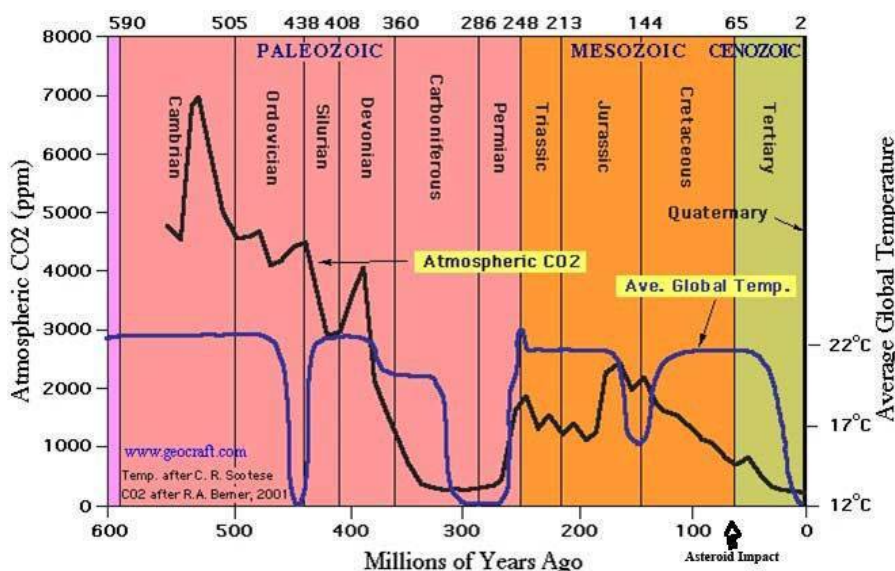
Both the ice core records and empirical evidence of surface temperature and air temperature confirms that CO2 follows temperature not drives temperature.

If it is C14 that is believed to have increased from anthropogenic emissions, then C14 is almost exclusively produced in the upper atmosphere by the interaction of cosmic radiation. About 99% of atmospheric CO₂ is C12 and 1% C13, C14 is only in trace amounts. C13/C12 ratios from burning fossil fuels are also higher as from volcanoes, C4 plants have different C13/C12 ratios than C3 plants, also there is such large fluxes between ocean/atmosphere and atmosphere/terrestrial, do we even know how much CO₂ the soil takes up or phytoplankton in the oceans?

It is important to note that historically CO₂ was allot more.



Sources:
Historic CO₂ Data: Berner, R.A. and Z. Kothavala, 2001. GEOCARB III: A Revised Model of Atmospheric CO₂ over Phanerozoic Time http://ftp.ncdc.noaa.gov/pub/data/paleo/climate_forcing/trace_gases/phanerozoic_co2.txt
 Current CO₂ Data: NOAA ESRL recent monthly mean CO₂ <https://www.esrl.noaa.gov/gmd/ccgg/trends/>
 Future CO₂ Projections to 2100, IPCC 2007 http://www.ipcc-data.org/observ/ddc_co2.html



re. Carboniferous period see also:
<http://www.ucmp.berkeley.edu/carboniferous/carboniferous.php>
https://en.wikipedia.org/wiki/Geologic_time_scale

PART 3

Some basic science experiments that refute CO2 warming hypothesis

Nine observations and experiments that refute anthropogenic warming theory include:

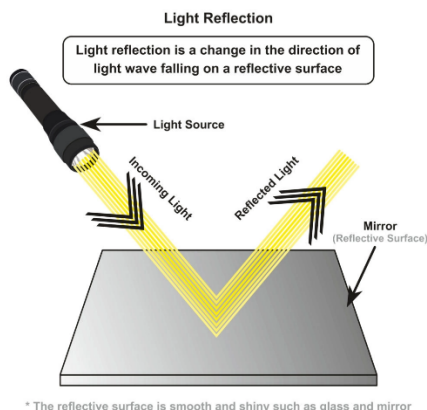
1. One can cook an egg on hot surfaces or get sunburn from the powerful and penetrating solar radiation but not from the weak IR upgoing thermal radiation in the cooler air.



2. One can see the breath on a cold morning or a hot air balloon.



3. If you shine a torch on a surface and reflect the weak reflected light back onto the surface it doesn't increase the surface brightness more than the initial powerful light already has. Heat and light work the same. Note that dry hot wind is sensible heat not radiative forcing being disputed.



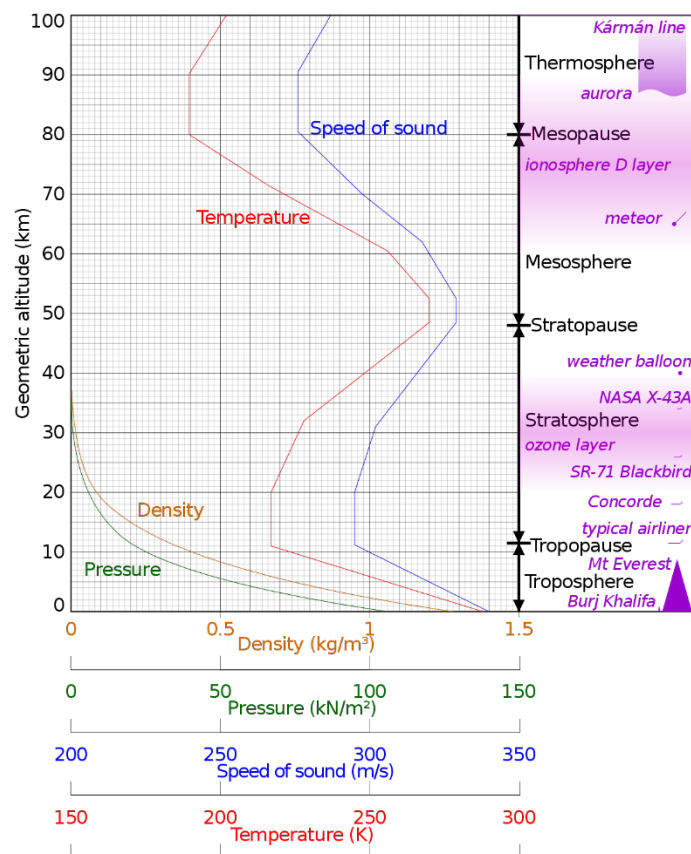
* The reflective surface is smooth and shiny such as glass and mirror

4. Even a downward radiant heater cannot heat a bath. Air is a poor conductor of heat of lower specific heat capacity than water.

5. One can see water vapour from a bath creates evaporation cooling as water turns from liquid to gas, it is light and removes latent heat and creates a local low pressure atmospheric circulation and convection pulling cool air in. In nature this condenses into clouds and rain.

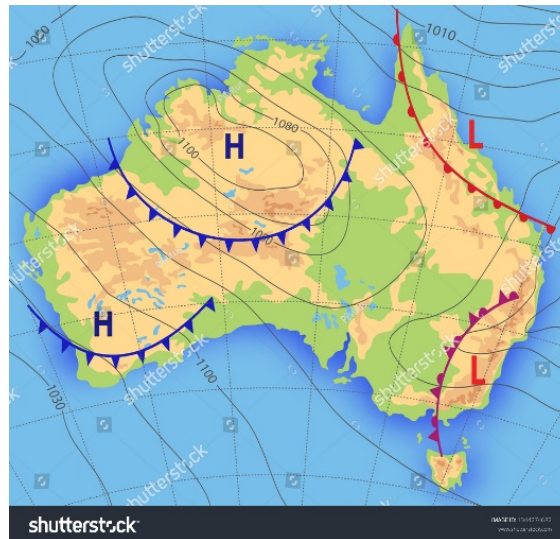


6. If you measure the atmospheric pressure and temperature at different altitudes, you can see temperature is a function of pressure not atmospheric composition.



Source: [Geometric altitude vs. temperature, pressure, density, and the speed of sound derived from the 1962 U.S. Standard Atmosphere](#)

7. One can simply view a weather map to see heatwaves and droughts are from high pressure systems not atmospheric composition of a trace gas. In fact high pressure characteristic of dry weather and clear skies reduces relative humidity preventing clouds and allowing much insolation to reach the surfaces.



8. One can see if gets far hotter in cloudless deserts along the horse latitudes subtropical high-pressure ridge than it does along the moist equatorial where the natural greenhouse effect is highest. It also gets colder at night as clouds reduces incoming solar radiation by day and slows the rate of heat loss at night.



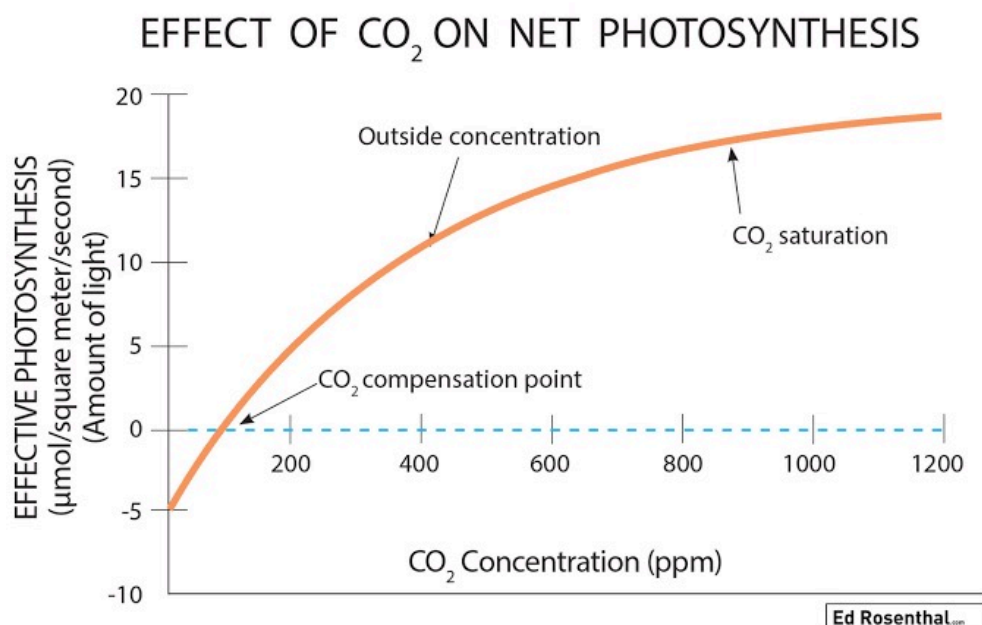
9. One can measure temperature and humidity and see that water vapour only increases heat index or apparent temperature making it feel hotter not air temperature and generally precipitates around a wet bulb temperature of 35C.

10. One can think of greenhouses gas like phlegm. Greenhouses gases are mainly water vapour with trace amounts of other gases do not increase temperature and are not the cause however do remove latent heat through latent heat of vaporisation and condensation. Similarly phlegm removes irritants and toxins from the body.

Part 4

How much CO₂ vegetation absorbs compared to anthropogenic emissions

It is well understood that both C₃ and C₄ plants thrive on CO₂. The global average atmospheric CO₂ concentration is 416 parts per million or 0.04% of air and nurseries pump CO₂ 1000 ppm for optimum plant growth. Research shows that the Southern Ocean is the biggest carbon sink feeding phytoplankton that basis of the food web that produces aerosols inoculating clouds and most of the worlds oxygen. Warm water degasses and upwelling of cool water absorbs CO₂ in what is known as the ocean conveyor belt. The open oceans cannot go acid due to buffering pH 7.8±0.3 given its salty. Carbonic acid is a weak acid that forms bicarbonate seashells, corals, and crustaceans as well as feeds seaweed that all has an acid-base regulation role. Acid sulphate soils can make waterways acidic and kill sea grass.



There is an estimated 3.04 trillion trees on Earth. A standard tree absorbs 48 pounds or 21.77kg of CO₂ per year which equates to 66.18 trillion tonnes of CO₂ absorbed by trees per year. The world emits 36.8 billion tonnes of CO₂ per year which means the world is a net carbon sink due to trees by 66.14 trillion tonnes per year.

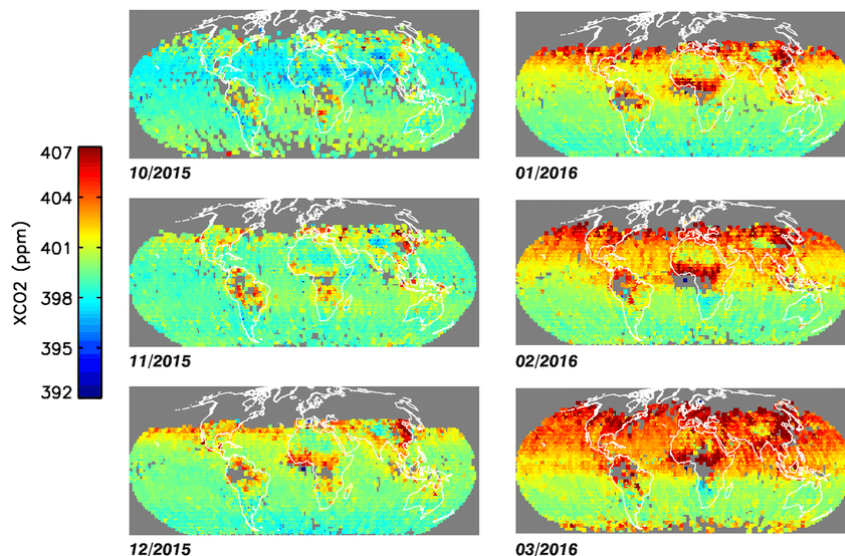
Phytoplankton in the oceans while only account for 1-2% of the total global plant carbon, they fix between 30 and 50 billion tons of carbon annually that is about 40% of the total.

<https://pubmed.ncbi.nlm.nih.gov/24311124/#:~:text=Abstract,about%2040%25%20of%20the%20total>



This is confirmed by the best representation of CO₂ from the OCO₂ satellite time lapse over a year that shows seasonal change and huge fluxes between oceans and atmosphere and terrestrial biota with it being assimilated by vegetation each Spring and Summer in the Northern hemisphere. OCO₂ Satellite time-lapse over a year here. <https://m.youtube.com/watch?v=x1SgmFa0r04>

The OCO₂ Satellite shows seasonal and most CO₂ is absorbed by vegetation visibly in the Northern Hemisphere every Spring and Summer.



There is symbiosis, complexity, dynamic equilibrium and self-regulation. One CSIRO study shows deserts greening from rising CO₂.

<https://www.csiro.au/en/news/all/news/2013/july/deserts-greening-from-rising-co2#:~:text=In%20findings%20based%20on%20satellite,the%20Middle%20East%20and%20Africa%2C>

A NASA study shows planetary fertilisation.

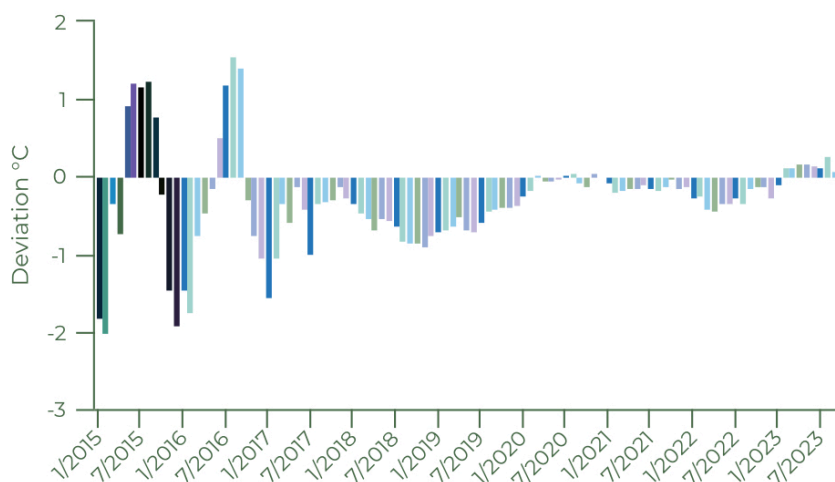
<https://www.nasa.gov/technology/carbon-dioxide-fertilization-greening-earth-study-finds/>

Part 5

Global average temperature

From the official NOAA Global Climate Report of 2022, the global average temperature was 14.76C which is 0.86C above the 20th century average of 13.9C that began in 1880 (NOAA Annual 2022 Global Climate Report). The global average temperature based on minute-to-minute satellite is currently 14.19C as at November 23 2023 from <http://temperature.global>. The well accepted global average temperature from 1950-1979 based on thousands of land and sea based monitoring by the British Metrological Service was 15C or 288 Kelvin that is still in the university textbooks today. In the 1988 El Nino year a NASA scientist Dr. Hansen changed the goal post to 14C when the IPCC was established.

GLOBAL TEMPERATURE



Average (Jan 2015-Oct 2023): -0.274°C

Source: Temperature.Global

Data: NOAA global METARs 2015-current

NDBC global buoy reports 2015-current

MADIS Mesonet Data, NOAA OMOs

<https://temperature.global>

BEAM venngage.com/beam

When the IPCC was established after Dr. Hansens 1988 testimony before Congress the First Assessment Report in 1990 listed the observed surface temperature of Earth as 15C. An informative article by American Thinker 'Fourteen is the New Fifteen' how the global average temperature was quietly changed from 15 to 14C. https://www.americanthinker.com/articles/2012/11/fourteen_is_the_new_fifteen.html

Part 6

Major drivers of climate change

Through my research and understanding there are far bigger players in weather and climate than a trace gas that only exists at 0.04% of air. Climate is weather over time which is dictated by pressure systems not atmospheric composition of a trace gas.

Some major players in weather and climate include:

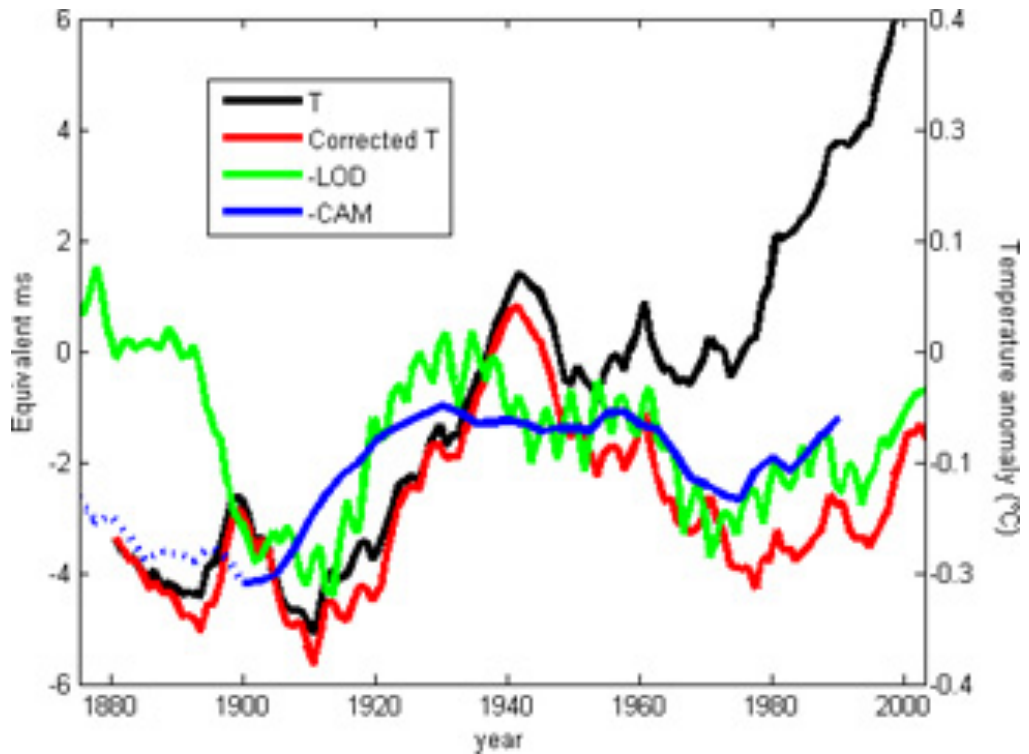
1. The Earth gently releases its internal energy from various geological processes from slow moving and fast moving ocean ridges, intraplate hotspots, subduction zones, and back arc basins. For example hydrothermal vents in the Tonga Trench, New Hebrides Trench, and New Britain Trench contribute to the Pacific Warm Pool where solar radiation easily evaporates water swirling off rainclouds and flooding rains ie. La Nina. Similarly hydrothermal vents in the Peru-Chile Trench etc is the cause of El Nino. Quantitative data on larval dispersal from deep ocean currents is limited and mainly from deep sea mining studies. Factors include solar wind reverberating the magnetosphere, planetary seismic tidal pulls, core angular momentum CAM and length of day LOD, and expansion and decompression of the Earth.

Planetary seismic tidal pulls is influential of weather and climate. From this study by Salih Muhammad Awadh “Planets interact with each other influencing earthquakes via the gravitational stresses arising from the configuration of the solar system planets that cause a slowdown of the rotational/revolving speed of the Earth. This stimulates the Earth’s plate to move generating earthquake due to the activation of faults.”

https://www.researchgate.net/publication/349804886_Solar_system_planetary_alignment_triggers_tides_and_earthquakes

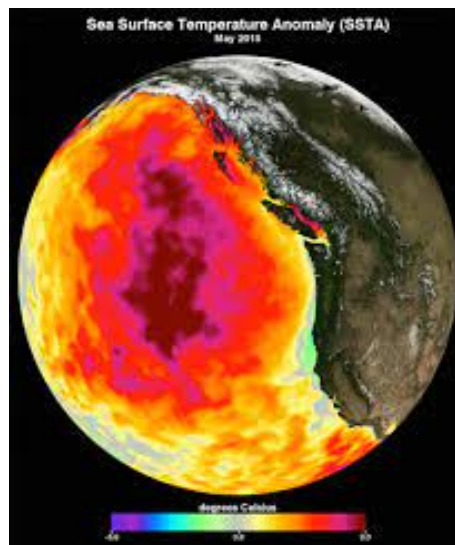
This study shows that fluctuations in atmospheric angular momentum and the length of day are predictable out to more than a year ahead and that this provides an atmospheric source of long-range predictability for surface climate. <https://www.nature.com/articles/s41561-022-01037-7>

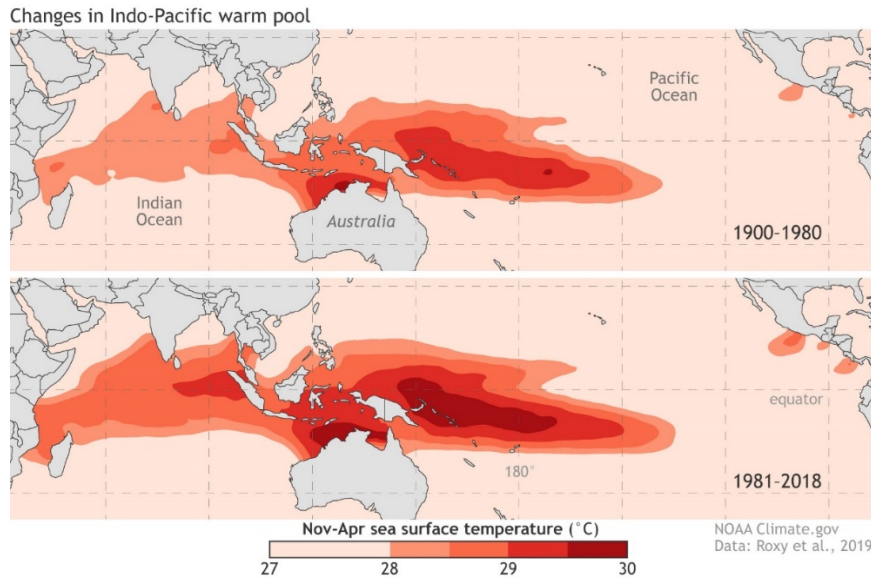
Time series of Earth's surface air temperature (black line) and time series corrected for the influence of human activities (red line), Earth's length of day (green line) and Earth's core angular momentum (blue line).



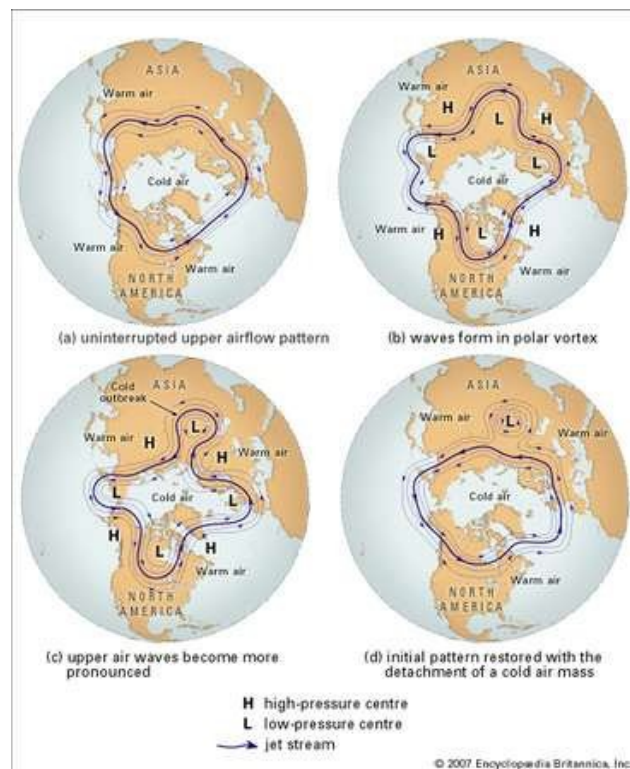
Source: NASA/JPL- Université Paris Diderot - Institut de Physique du Globe de Paris. <https://climate.nasa.gov/news/489/journey-to-the-core/>

The satellite images below show the 'blob' in the Eastern Pacific that is related to El Nino and hydrothermal vents in the Peru-Chile Trench as well as the Pacific Warm Pool in the Western Pacific that is related to La Nina and hydrothermal vents in the Tonga Trench, New Britain Trench, and New Hebrides Trench.

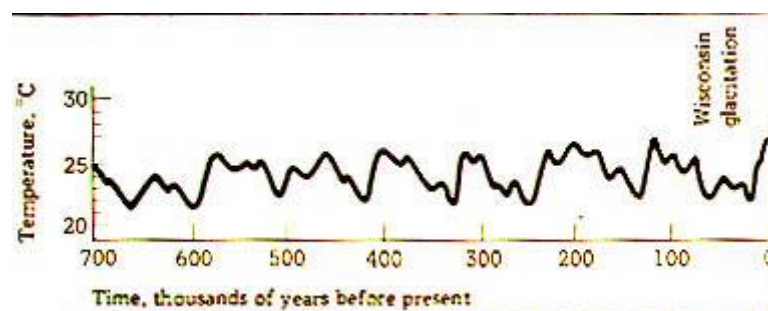




- Stronger Rossby waves or planetary waves in the said Northern Hemisphere from the Earth's rotation and Coriolis effect due to more land, the highest mountains, and more land-sea boundaries are linked to extreme weather stalling high and low pressure systems as well as amplified warming of the Arctic. The hole in the ozone layer is generally more stable due to stronger Rossby waves destabilises the polar vortex preventing stratospheric clouds from forming a prerequisite for solar wind blowing off the ozone layer after Solar dawn in Spring when maximum thermal mass ice extent. Solar wind is fastest in the polar regions as magnetic field lines are closest. Here is a video explaining Rossby waves and extreme weather from the Potsdam Institute for Climate Impact Research. <https://www.youtube.com/watch?v=MzW5lsbv2A0>



3. Changes in the Earth's and the Sun's magnetosphere can mean more solar radiation heating surfaces. In physics if you heat a magnet it weakens the magnetic field. Magnetic polar shift would increase the Earth's internal energy that would in turn weaken the magnetic field. This means increased solar radiation and higher UV, increased cosmic radiation that increases cloud cover particularly during solar minimums, increased seismic and volcanism including geothermal heating of the oceans, as well as changes to the ocean gyres and jet streams. In this article NASA are sceptical that changes in the magnetic field and magnetic polar shift is a major influence on weather and climate however evidence from tree rings in NZ of the last magnetic polar flip indicate otherwise. <https://climate.nasa.gov/explore/ask-nasa-climate/3104/flip-flop-why-variations-in-earths-magnetic-field-arent-causing-todays-climate-change/#:~:text=Since%20the%20forces%20that%20generate,every%20300%2C000%20years%20or%20so.>
4. The built environment including solar and wind farms as well as bare earth does raise surface temperature amplitude warming air mass near surfaces via conduction which is removed by convection. The built environment particularly in the said Northern Hemisphere would skew global temperatures. Urban heat island effects make temperatures and extreme hot weather more severe. Also cloudless deserts such as Northern Africa hot dry air mass does tend towards the poles and contributes to the Azore High and heatwaves across Europe. Most cloudless deserts are along the horse latitudes subtropical high pressure ridge.
5. Milankovitch cycles is the relationship between the eccentricity of Earth's orbit and the orientation (tilt) of the planet's axis of rotation vary systematically over time. This causes cyclic shifts of solar energy input that can produce climate modulations (repetitive temperature variations). These variations are termed Milankovitch cycles in honor of Serbian astrophysicist and mathematician Milutin Milankovitch who in 1920 figured out these variations and proposed that they influence world climate.



This image shows a tracing of ocean surface temperatures for the past 700,000 years, based on oxygen isotopes of marine microfossils. We see a very clear periodicity of ca. 100,000 years (the eccentricity cycle of Milankovitch), and a superimposed periodicity of ca. 20,000 years (the precession cycle of Milankovitch). <http://www.indiana.edu/~geol105/1425chap4.htm>

Milankovitch cycles while cannot explain current climate and weather have historically been influential. [https://climate.nasa.gov/explore/ask-nasa-climate/2949/why-milankovitch-orbital-cycles-cant-explain-earths-current-warming/#:~:text=Milankovitch%20cycles%20include%20the%20shape,is%20pointed%20\(its%20precession.](https://climate.nasa.gov/explore/ask-nasa-climate/2949/why-milankovitch-orbital-cycles-cant-explain-earths-current-warming/#:~:text=Milankovitch%20cycles%20include%20the%20shape,is%20pointed%20(its%20precession.)

6. There is maximum cosmic radiation during solar minimums, that is high energy particles from outside our solar system. Cosmic radiation can create nucleation sites in the atmosphere which seed cloud formation and create cloudier conditions. <https://www.swpc.noaa.gov/impacts/space-weather-impacts-climate#:~:text=During%20solar%20minimum%20there%20is,formation%20and%20create%20cloudier%20conditions.>
7. There are cosmic gravitational waves that are ripples in the fabric of space-time, as well as atmospheric gravity waves that are terrestrial. Atmospheric gravitational waves occurs when an air parcel moves upwards such as by a tall mountain range moving to a less dense atmospheric layer. Heavier air mass parcels then descend with gravity resulting in a periodic oscillation. They play a role in weather and climate, decelerate jet streams, and affect the circulating polar vortexes. They also influence turbulence, temperature, and chemistry and is difficult to incorporate in atmospheric simulations. Reference: <https://www.pnas.org/doi/10.1073/pnas.1912426116>
8. Volcanic gases like sulphuric aerosols can cause global cooling encouraging cloud cover and precipitation such as the Little Ice Age that is also thought to be caused by reduced solar output and changes in atmospheric circulation. Increased volcanism and geothermal heating the oceans can have a cooling effect such as La Nino or a warming effect such as El Nino. The Medieval Warm Period was thought to be due to reduced volcanic activity as well as increased solar radiation and other suggestions that changes in ocean circulation patterns bringing warmer water into the North Atlantic.
9. Asteroids can have a big impact on the atmosphere and climate. Dust and particles of debris can enter the upper atmosphere and block the sun reducing insolation and cooling climate. If it lands in the oceans can cause tsunamis and increase water in the atmosphere resulting in cooling. It can also trigger earthquakes and volcanism as well as wildfires.

Part 7

Introducing the Impacts of Climate Capitalism

Not only has the science of CO2 warming has been hotly debated, also the impacts of climate capitalism and the climate industrial complex on pristine environments, farmlands, and important biodiversity areas. In addition to the environmental impacts people are also concerned about the efficiency and costs of living associated with the postmodern resentment ideology for the global trillion-dollar tax initiative.

Due to worldwide damming for climate change and pollution, freshwater fisheries represent the highest proportion of recent global extinctions. Dams involve mass forest floor flooding, create barriers to fauna movement, stop sediments and nutrients, and altered flow regimes effect the whole river ecology.

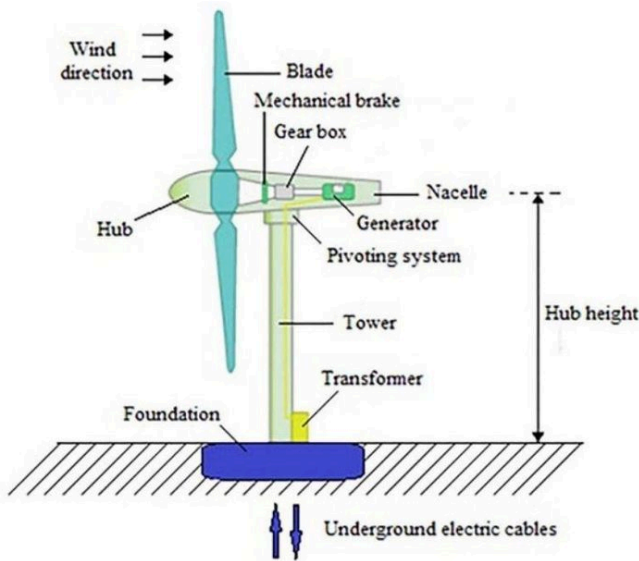
Global deforestation for biomass wood pellets green power that represents an estimated 60% of Europe's renewable energy as well as biofuels competing with pre-existing agriculture opening new land causing mass deforestation is responsible for millions of hectares of forest clearing in recent times. Despite much community opposition and even litigations biomass is still included renewable energy targets.

The World Bank estimates 5x more minerals mining required for a 'clean' energy transition. Hard to get rare earth mining with radioactive waste and critical metals mining will always be in low concentrations. Often EV's, solar panels, and wind turbines are not recyclable and have a lifetime creating a massive landfill issue.

Solar factories are chemical and energy intensive creating toxic tetrachloride and hydrofluoric acid waste contaminating land and water. There currently is no viable recycling in place creating a mammoth toxic landfill problem leaching lead and cadmium.

Mega solar and wind farms have measurable warming effects, use large areas of land, have roads, large amounts of mining, transportation, and associated mega transmissions that has impacts. About 30,000 tonnes of iron ore for each turbine, 30,000 tonnes of cements from shale and limestone mining, about a tonne of rare earth Neodymium creating Uranium and Thorium waste, Cobalt mining in the Congo from child slave labour, transportation, and Balsa wood from deforestation in the Amazon. They are not recycled and creating a mammoth landfill problem and rely on coal power stations to get the turbines turning and power stations anyway duty of care given they are intermittent energy. Wind farms are not only functional habitat loss for migratory birds, birds of prey, bats, and marine life. The Betz limit of a wind turbine is almost 60% of the kinetic energy of the wind is used to generate electricity. As high as the Empire State Building and hundreds of square kilometres it is friction and pressure differentials in the boundary layer effecting atmospheric flow and moisture. The air is the greatest equaliser of the air.

Are wind farms the answer?



https://www.researchgate.net/figure/Overview-of-main-components-for-a-wind-turbine_fig2_318112329

- A big ecological footprint**
- An estimated 300 tonnes of iron ore per turbine from coal coking
 - An estimated 400 tonnes of concrete per MW from shale and limestone mining
 - Over a tonne of rare earth Neodymium, Dysprosium and other rare earths with uranium and thorium waste
 - An average of 4.7 tonnes of copper per turbine
 - Balsa wood from deforestation of the Amazon an estimated 60 trees per turbine
 - Oil and lubricants
 - Polymers
 - Transportation
 - Rooding, deforestation, erosion and sedimentation
 - Transmission lines deforestation and limiting factor of endangered species
 - Not recycled creating a mammoth landfill problem
 - Intermittent energy relies on power stations anyway

Chalumbin Wind Farm next to World Heritage Area



Rooding and Transmissions impacts

Functional habitat loss
Wind farms hundreds of square kilometres and tens of thousands of kilometres of transmissions are functional habitat loss for migratory birds, seabirds, shorebirds, raptors, bats, and marine life. The wind farm projects are a major threat to remaining pristine environments and biodiversity areas today.

Measurable warming effects

If the world produces 1870TWh of wind power and the Betz limit of a wind turbine is 59.3% of the kinetic energy of the wind is used to generate electricity then the world takes 6.732×10^{18} Joule [J] of energy out of wind, wind that tends to the poles for cooling and self regulation. Wind that is the greatest equaliser of the air. There is an estimated 341,000 wind turbines in the world and a 2MW wind turbine uses 1.5 acres which is 5115000acres or 20,700km² of land and water area used for wind farms not including the hundreds of thousands of kilometres of transmissions. As high as the Empire State Building it is friction and pressure differentials in the boundary layer effecting atmospheric flow and moisture and measured warming effects.

Michael Galvin.
9/12/2023

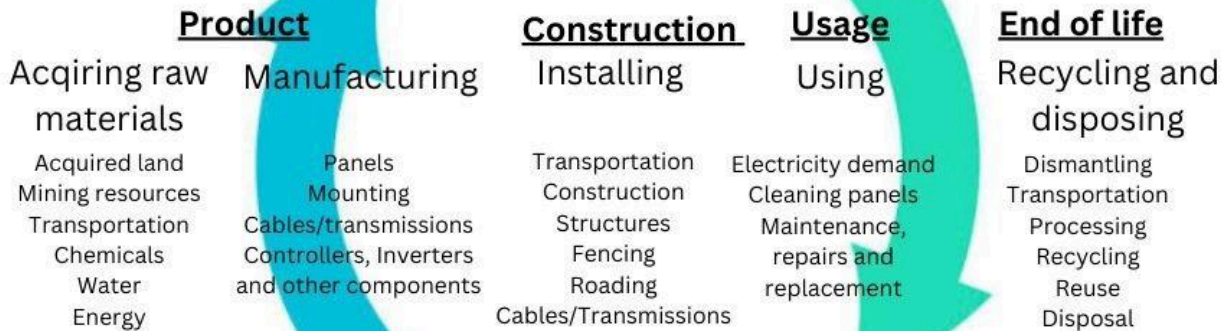
Intermittent energy
Wind turbines might generate electricity 2% of the time at worse or 66% of the time at best. It is considered inefficient and unreliable energy relying on power stations to get turning and power stations have to keep going to keep the power lines running full duty of care. Foreign companies are heavily subsidised by the government and profits going overseas. Some of the highest priced energy include Denmark, South Australia, and Germany. In NSW the tarrif rate of electricity was 11.87c/KWh for years before early 2000's has since more than tripled. Batteries involve rare earth mining, fire hazard, and are an inefficient way to provide electricity with the world's biggest batteries only provide temporary relief.



Life Cycle of a Solar Panel

INPUTS

Silicon, Aluminium, Copper, Silver, Indium Gallium, Selenide, Polymer, Cadmium telluride, energy, fuel, boron, phosphoric acid, trichloroethylene, O-dichlorobenzene, benzene, and toluene , water, land, etc.



OUTPUTS

Tetrachloride and Hydrofluoric acid waste from manufacturing, landfill including lead and cadmium, uranium and thorium from rare earth mining, intermittent energy, deforestation, potential heat island effects, jobs, water pollution, land degradation, etc.



Michael Galvin. 14/12/2023

Some environmental impacts of climate capitalism



Rare earth mining with uranium and thorium waste, critical and precious metals, shale and limestone mining for cement, iron ore from coal coking, plus sand mining for solar panels. Chemical and energy intensive manufacturing that produces toxic tetrachloride and hydrofluoric acid waste.



Transportation of raw materials including shipping and trucking not only creates air pollution it is a big operation that disrupts traffic and risks to others.



Solar panels and wind turbines have a life, with no current recycling in place solar and wind farms are creating a mammoth toxic landfill problem that can leach lead and cadmium.



Over tens of thousands of kilometres of transmission lines that involves deforestation and roading. This impacts on forests and farmland and is an ongoing limiting factor of endangered Raptors.



Over tens of thousands of kilometres of roads is required for wind farms that can be hundreds of square kilometres in size. This can cause erosion and sedimentation, effect stream water quality, and other environmental issues such as weeds and roadkill.



Hundreds of thousands of square kilometres of forests are cleared for hydro dams, biomass wood pellets green power, biofuels, balsa wood for turbine blades, and for mega solar and wind farms and associated mega transmissions.



Wind farms are functional habitat loss for migratory birds, seabirds, shorebirds, water birds, raptors, bats, and marine life. Wind farms and associated transmissions became a major limiting factor of endangered Raptors and Bats.

Conclusions and Summary

Due to thermodynamics of atmospheric processes including modes of heat transfer, the first and second laws of thermodynamics, sensible and latent heat flux, lapse rates and convection, the IPCC term radiative forcing or back radiation is easily refuted. There is no actual empirical evidence that CO₂ at 0.04% of air increases temperature. Currently one turbulent fluid cannot be modelled using the Navier-Stokes Equations and over a hundred climate models arriving at different results is not reproductive evidence therefore not science. The powerful and penetrating solar radiation heats surfaces in the first instance warming air mass near surfaces via conduction which is removed by convection. The main heat transfer is by convection. Due to the first law of thermodynamics conservation of energy even water vapour only increased the heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. The cooler air cannot further heat the already hotter surface more the initial powerful solar radiation already has. Due to the second law of thermodynamics heat transfer is irreversible from hotter to cooler object, warmed air mass rises like a hot air balloon or ones breath on a cold morning.

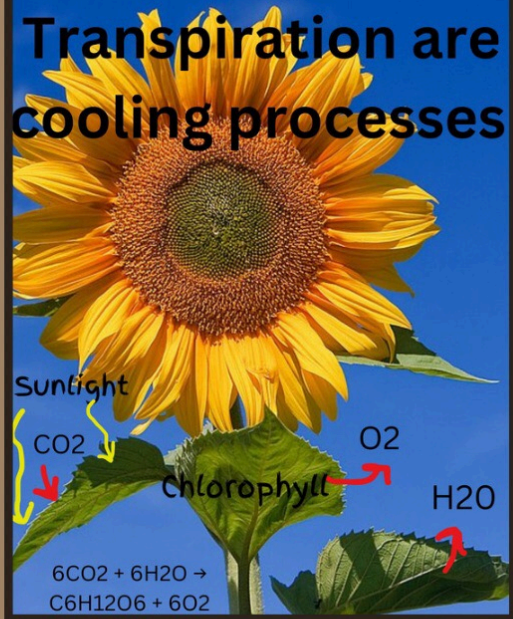
The air, land, and oceans are primarily heated by solar radiation as well as geothermal as the Earth's gently releases its internal energy from various geological sources from slow moving and fast moving ocean ridges, intraplate hotspots, subduction zones, and back arc basins. Changes in the solar, magnetic fields, core angular momentum and length of day variations, as well as planetary seismic tidal pulls all have a role to play in weather and climate. It is also known that Rossby waves cause extreme weather stalling high and low pressure systems and amplified warming of the Arctic. There is no doubt that the build environment, including solar and wind farms do increase temperature and extreme hot weather more severe.

Scientific expertise and its epistemic authority can be corrupted by financial and political interests and science can be based on non-epistemological interests eg Hypothesis acceptance, global taxation of the whole supply chain, mining and energy development. Scientific organisations can be influenced by political interests, and is allot of propaganda for the trillion dollar carbon tax, mining and development.

Climate ideology is by far the greatest risk to pristine environmental and biodiversity areas today including mega dams, new minerals mining, global deforestation, and functional habitat loss for mega solar and wind farms and associated mega transmissions. Fossil fuels are a lie for pricing and taxation and are vast abiotic resources produced by the Fischer and Tropsch Equations, Sabatier Equations, and Serpentinisation. The only true fossil fuel is thermal coal lignite from peat bogs that is shallow and easy to mine unlike hard-to-get rare earth mining and worldwide fracking transition fuel for intermittent solar and wind farms. Air pollution is a public and ecological health risk including photochemical smog, particulates, NO_x and SO_x emissions. Wet scrubbers are 95% at removing sulphate aerosols and particulates.

I sincerely hope this refutation in the form of an exposition of global warming theory, definitions of terms and theories, and declaration of the more truthful and exact science can help advance truth in science and make people aware of the misinformation and impacts that this post-modern resentment ridden ideology.

Photosynthesis & Transpiration are cooling processes



PHOTOSYNTHESIS

Photosynthesis is an endothermic reaction which means it absorbs heat from the surrounding environment and cannot occur without sunlight. Plants make glucose sugar C₆H₁₂O₆ from CO₂ and H₂O. They also release oxygen O₂ in the process.

TRANSPIRATION

Plants keep cool in sunlight through evaporation cooling from transpiration of water vapour through the stomata. As water turns from liquid to gas it releases heat and cools the plant.

SYMBIOSIS

Both C₃ and C₄ plants thrive on CO₂. The global average is 416ppm (0.04% of air) and optimal plant growth is 1000ppm. Vegetation assimilates most CO₂ every Spring and Summer as well as phytoplankton that produces most of the worlds oxygen. The open oceans cannot go acid due to buffering pH 7.8+-0.3, warm water degasses and upwelling of cool water absorbs CO₂. Carbonic acid forms bicarbonate seashells, corals, crustaceans, and feeds seaweed that has an acid-base regulation role.

NO EVIDENCE CO₂ INCREASES TEMPERATURE

There is no empirical evidence that CO₂ increases temperature. Even one turbulent fluid cannot currently be modelled using the Navier-Stokes equations. Over a hundred climate models arriving at different results is not reproductive evidence therefore not science. Even water vapour only increases the heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. In the stratosphere CO₂ has cooling function.

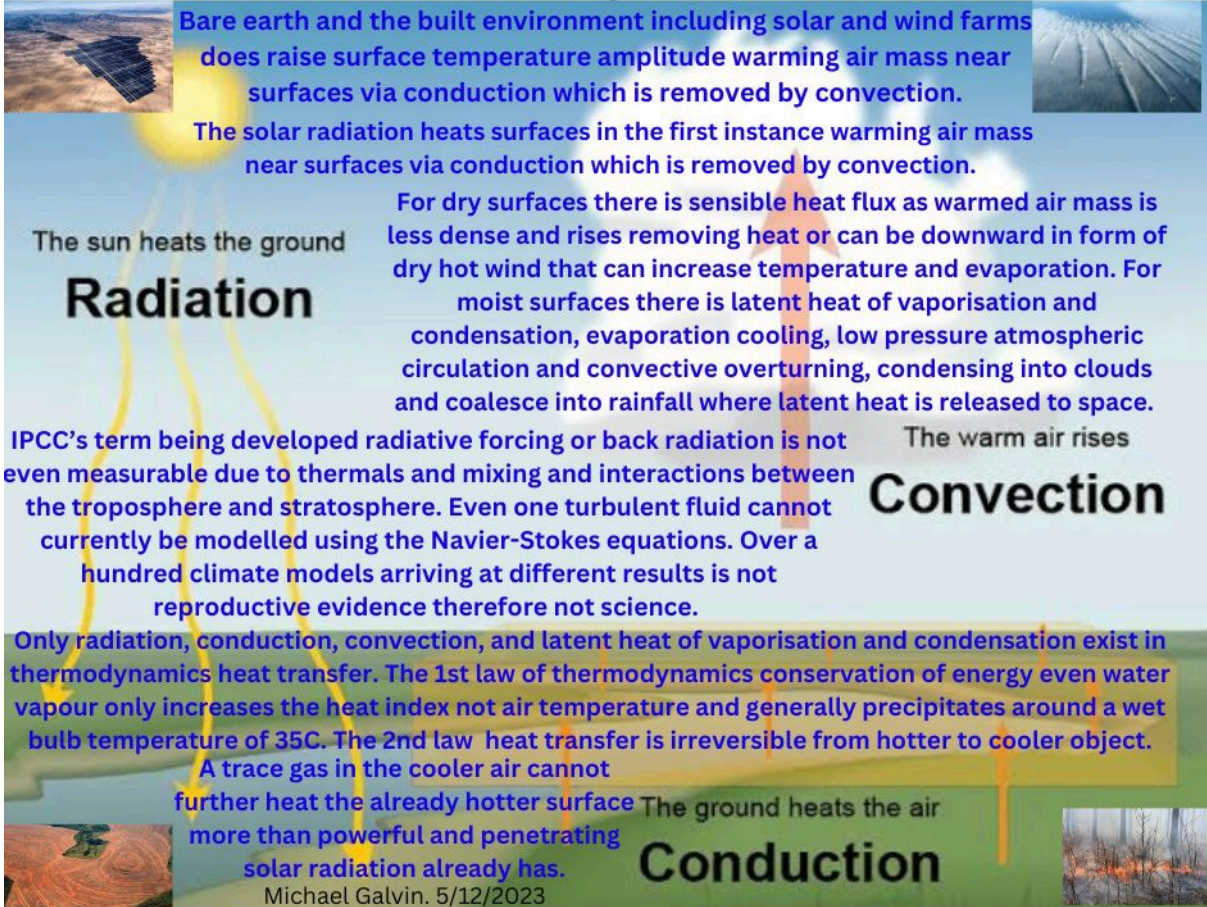
THERMODYNAMICS

IPCC's term being developed radiative forcing is not even measurable due to thermals and mixing and interactions between the troposphere and stratosphere.

Only radiation, conduction, convection, and latent heat of vaporisation and condensation exist in thermodynamics heat transfer. Solar radiation heats surfaces in the first instance warming air mass near surfaces via conduction which is removed by convection. There is conservation of energy and heat transfer is irreversible 1st and 2nd laws. Sensible heat flux, latent heat flux, lapse rates, low pressure, convection, clouds and rainfall are all cooling processes.

Michael Galvin.
Revised: 5/12/2023

Humans can skew temperature, CO2 cannot.



Radiation

The sun heats the ground

Bare earth and the built environment including solar and wind farms does raise surface temperature amplitude warming air mass near surfaces via conduction which is removed by convection.

The solar radiation heats surfaces in the first instance warming air mass near surfaces via conduction which is removed by convection.

For dry surfaces there is sensible heat flux as warmed air mass is less dense and rises removing heat or can be downward in form of dry hot wind that can increase temperature and evaporation. For moist surfaces there is latent heat of vaporisation and condensation, evaporation cooling, low pressure atmospheric circulation and convective overturning, condensing into clouds and coalesce into rainfall where latent heat is released to space.

IPCC's term being developed radiative forcing or back radiation is not even measurable due to thermals and mixing and interactions between the troposphere and stratosphere. Even one turbulent fluid cannot currently be modelled using the Navier-Stokes equations. Over a hundred climate models arriving at different results is not reproductive evidence therefore not science.

Only radiation, conduction, convection, and latent heat of vaporisation and condensation exist in thermodynamics heat transfer. The 1st law of thermodynamics conservation of energy even water vapour only increases the heat index not air temperature and generally precipitates around a wet bulb temperature of 35C. The 2nd law heat transfer is irreversible from hotter to cooler object.

A trace gas in the cooler air cannot further heat the already hotter surface more than powerful and penetrating solar radiation already has.

Convection

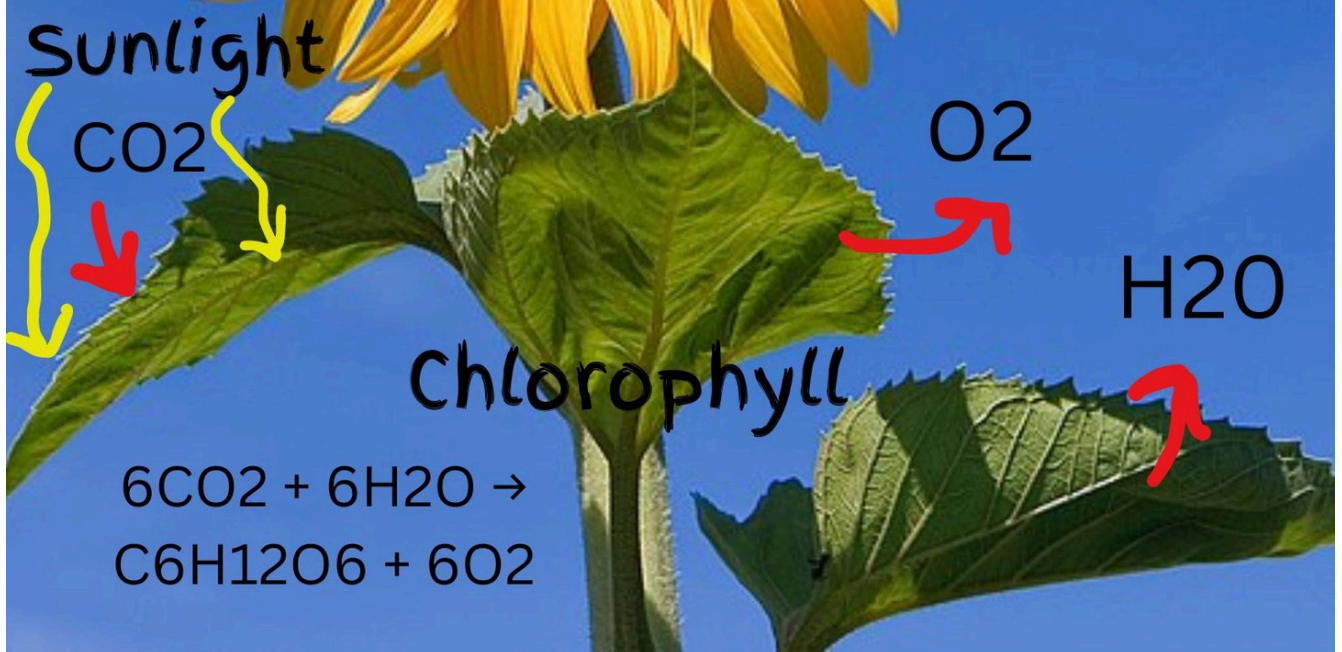
The warm air rises

Conduction

The ground heats the air

Michael Galvin. 5/12/2023

Photosynthesis & Transpiration are cooling processes



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