Proxy Temperatures & Historical Records show continuation of the present warming is NOT an "EXISTENTIAL THREAT" to humans



Bob Endlich

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Cruces Atmospheric Sciences Forum
15 Feb 2023 edited 6 Mar 2023

Acknowledgements:

Bernie McCune suggested including fossil evidence of human habitation during the Wisconsin Ice Age in southern New Mexico, specifically Pendejo Cave and White Sands National Park, and geologic history showing most of the past 600 million years earth was significantly warmer than today.

Dave Tofsted suggested mentioning Egyptian art from Biblical times showing men wearing nothing but breechcloths, an indication of much warmer times than today. Dave also made the plots of Holocene Temperatures seen late in the graphics.

Outline

Introductory Remarks: Chemistry. Isotopes. Proxy Temperatures.

Cries of Alarm

Right away, things don't add up. Examples.

Why would anyone pay attention to Alarmist Forecasts?

Temperatures and <CO2> over Geologic Time

Temperatures since the Happisburgh Footprints were made, ~850,000 years ago

Human Ancestors' timelines the last 400,000 years

Time Domain of last 140,000 years and lessons from the Eemian Interglacial

Time Domain: Last 50,000 years. Lessons from White Sands National Park.

Time Domain: Last 11,000 years, the present warm period

Concluding Remarks: SEPP, CO2 Coalition, Ian Plimer.

New Visitors

Welcome New Visitors

By Bob Endlich

This is the starting point for new visitors to become acquainted with some of the errors and other discrepancies associated with the alarmist view of climate change.

Cruces Atmospheric Sciences Forum (CASF) is a group of Scientists, Engineers, and interested lay people who disagree with this notion of catastrophic, human-caused, CO₂-Fueled Global Warming, because the facts and basic scientific principles do not support it. The links on this page will show you measurements and data that cast serious doubt on the notion of climate alarm.

[Note: This menu item is currently under construction and links will be added as they become available and editing may be in progress for the documents at the link addresses. Ed]

Much of this presentation comes from items 20 & 21

LINKS

- 1. About Cruces Atmospheric Sciences Forum
- 2. Cruces Atmospheric Sciences Forum Who We Are
- 3. Galileo Found Guilty of Heresy for Stating Scientific Facts
- 4. Scientists Look at the Data
- 5. Meteorological Implications of the Hot Spot
- 6. Heavy Rainfall Amounts and Frequencies Are Not Increasing
- 7. Extreme Weather is Decreasing
- 8. 97% of Scientists Do Not Agree
- 9. EPA CO₂ Endangerment Finding Is Not Good Science
- 10. Crop Yields are Increasing
- 11. Convincing Evidence Exists
- 12. The Myth of America's First Climate Refugees
- 13. Southeast US Hot Spot? Not!
- 14. State-Sponsored Propaganda
- Studying Proxy Data
- 16. Carbon Dioxide Traps Heat?
- 17. Batteries: The Impossible Dream
- 18. Climate Czar (John Kerry) Puts Ignorance on Display
- 19. More Short Climate Topics
- 20. Warming Not An Existential Threat-Part I
- 21. Warming Not An Existential Threat-Part II
- 22. Willie Soon Quotes Richard Lindzen

Introductory Remarks

Notation: Sometimes scientists use different notation for the same thing. We'll see this...

Water is H2O. Two Hydrogens, one Oxygen. In Chemistry, we learn of Isotopes.

Oxygen is typically found in two isotopes, Oxygen-16 and Oxygen-18

Sometimes this is written also as O16 and O18, sometimes as 16O and 18O.

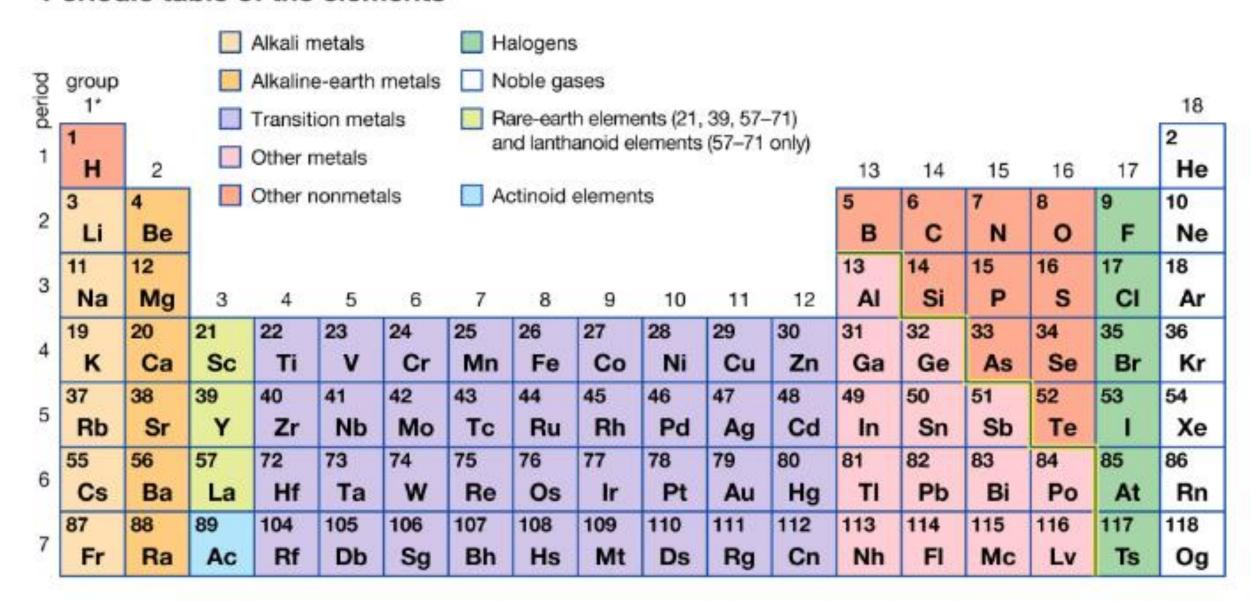
The ratio of O16/O18 in ice helps us determine past temperatures.

There are two forms of Carbon. Ordinary Carbon is Carbon-12; Radioactive Carbon is Carbon-14.

Radioactive carbon (14C) is constantly being created in the Earth's atmosphere by the interaction of cosmic rays with atmospheric nitrogen. The resulting 14C combines with atmospheric oxygen to form radioactive carbon dioxide, which is incorporated into plants by photosynthesis; animals then acquire 14C by eating the plants. When the animal or plant dies, it stops exchanging carbon with its environment, and thereafter the amount of 14C it contains begins to decrease as the 14C undergoes radioactive decay. (*from Wikipedia*)



Periodic table of the elements



Isotopes and Isotopic analysis

Isotopes:

Isotopes are atoms with the same number of protons, but different numbers of neutrons. They share almost the same **chemical** properties but differ in mass and therefore in **physical** properties.

For our purposes, the elements **Carbon** and **Oxygen** are most useful for the geochronology of temperatures.

Water consists of H2O, two Hydrogens, one Oxygen

The isotopes of Oxygen O16 and O18 and the ratio of O16 to O18 allow us to determine the temperature of the water which evaporated, then condensed, then fell as snow, and is now in the ice in Antarctica and Greenland. More later.

Isotopes of Carbon allow radiocarbon dating. From Nature,

https://www.nature.com/articles/s43586-021-00058-7#:~:text=Radiocarbon%20dating%20use%20the %20decay,over%20the%20past%2055%2C000%20years.

"Radiocarbon dating uses the decay of a radioactive isotope of carbon (14C) to measure time and date objects containing carbon-bearing material. With a half-life of $5,700 \pm 30$ years, detection of 14C is a useful tool for determining the age of a specimen formed over the past 55,000 years."

Oxygen Isotopes are of particular interest in ice core analysis. Oxygen-16 (8 protons, 8 electrons, 8 neutrons) is by far the most abundant isotope of oxygen, accounting for almost 99.8% of oxygen atoms, but Oxygen-18 (8 protons, 8 electrons, 10 neutrons) has an abundance of 0.2%. https://www.compoundchem.com/2017/08/15/ice-cores/

Because these isotopes behave identically chemically, a small number of water molecules in any body of water will contain two Hydrogen atoms and an Oxygen-18 atom, as opposed to an Oxygen-16 atom.

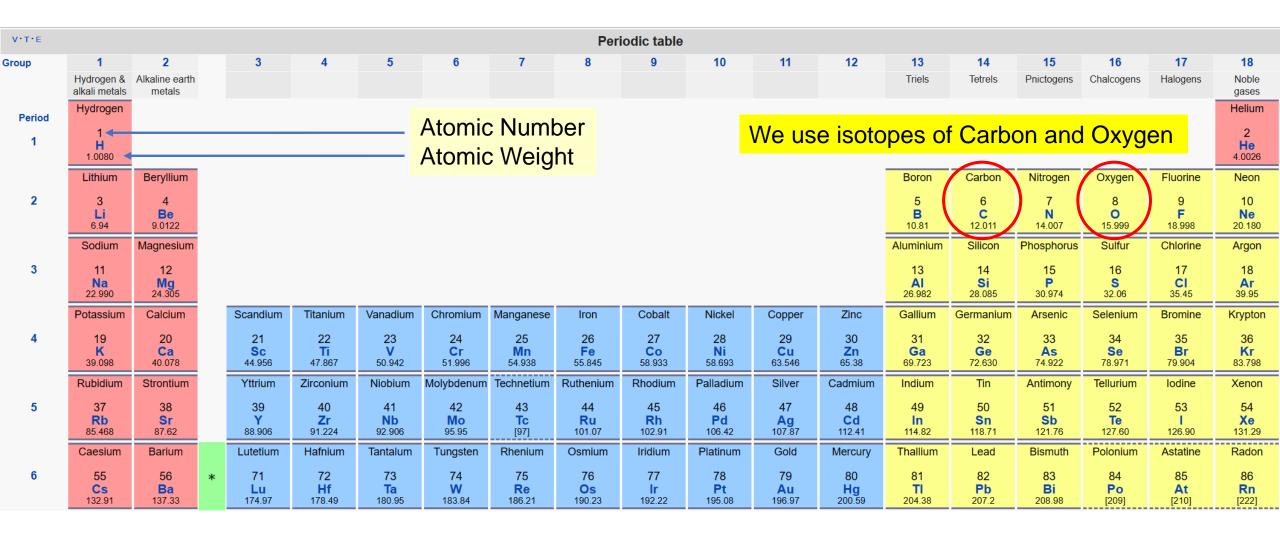
However, water molecules containing the lighter oxygen isotope are slightly more likely to evaporate due to their lower molecular mass, so as water from the oceans evaporates it becomes depleted in Oxygen-16.

At higher temperatures, slightly more Oxygen-18-containing water molecules will evaporate than at lower temperatures, and when this water eventually falls as precipitation, the discrepancy is preserved.

Consequently, for warmer years, scientists expect to see more Oxygen-18 in ice than they do in colder years. Since isotopic composition of snowfall lines up pretty well with the temperature when it fell, this allows past temperatures to be calculated. (I prefer, "when it evaporated")

Chemistry

https://en.wikipedia.org/wiki/Periodic_table



Proxy Temperatures:

We call temperature time histories time series.

The beginning of modern temperature time series, measured with liquid-in-glass thermometers, commonly dates only from the 1880s.

Science has developed the use of "proxy temperatures" to extend temperatures further back in time:

When a physical property is dependent on temperatures, and substances dependent on that property have accumulated over long periods of time, it is possible to reconstruct good estimates of the temperature time history, *proxy temperature time series*.

Examples of Proxy Temperatures

<u>Historical Records</u> (NOAA/NCDC) scientists used historical grape harvest dates to reconstruct summer temperatures, between April and September, in Paris from 1370 to 1879.

<u>Ice Cores</u> (Don Easterbrook in WUWT, from 2013)

Consider Water, H2O "The ratio of 18O to 16O depends on the temperature at the time snow crystals formed, which were later transformed into glacial ice"

The O16/O18 ratio in the water vapor when the snow crystals formed depends on the O16/O18 ratio of the water which evaporates.

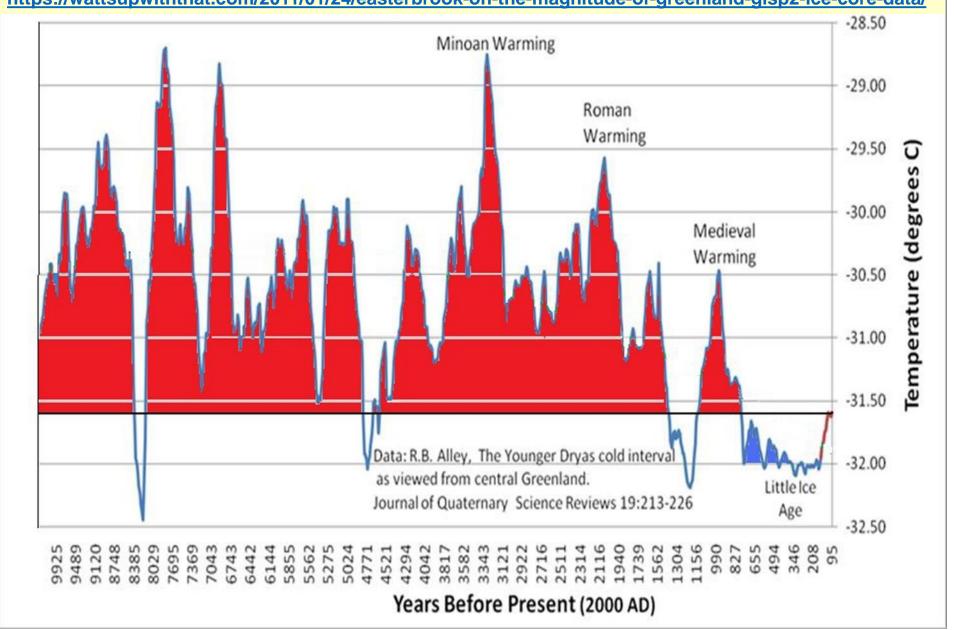
For Greenland, the snow which falls on Greenland frequently depends on the warm Gulf Stream water which moves great distances from the Gulf of Mexico to near Greenland.

The NSF has sponsored many ice-core drilling expeditions to Greenland.

I like to use the GISP2 Ice Cores published by Richard Alley of Penn State and analyzed by Don Easterbrook, https://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/

Greenland GISP2 Ice Core - Temperature Last 10,000 Years

https://wattsupwiththat.com/2011/01/24/easterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/



Climate Science. Many, principally the uneducated, speak of *Climate Science* as if an established scientific discipline.

That is just not so.

In order to understand climate history, one needs a broad base in many disciplines.

A few with which I am conversant: Chemistry. Physics. Geology. Meteorology. History. Climatology. Astronomy. Mathematics. Plate Tectonics.

Perhaps the most important is a skill: The Ability to Think Critically. I don't know if critical thinking can be taught *per se*.

But I think it can be learned by mastering several of the topics above, and employed both **academically** and **in the field** with practical experience.

Mine comes from developing the ability to forecast future events in Military and R&D environments. You need to learn HOW to think, not WHAT to think.

EXECUTIVE SUMMARY:

President Joe Biden has repeatedly declared "Climate change is literally an existential threat to our nation and to the world." By this he means "human-caused CO2-fueled global warming," and presumes that humans can pass "climate legislation" to regulate the climate.

While this view is popular in Media, Government and the Academy, we show it is without foundation.

Here's the **United Nations**:

- "... UN Secretary-General insisted that unless governments everywhere reassess their energy policies, the world will be uninhabitable."
 - "...Mr. Guterres said in a video message, which also forecast "unprecedented heatwaves, terrifying storms, widespread water shortages and the extinction of a million species of plants and animals".

The UN's IPCC has declared that an increase in global temperatures of 2C from the pre-industrial temperatures of the Little Ice Age, also threatens humanity's existence.

Sorry, humans can not determine the temperature of the Earth, the level of the sea, or even the spread of viruses to humans susceptible to those viruses.

I show graphically and in words that temperature is always changing, and that as recently as 7000 years ago, it was considerably warmer than the UNs "2C limit."

EXECUTIVE SUMMARY, p2:

Evidence that it was 3C warmer than today is in proxy temperatures from Greenland's GISP2 ice core first published by climate Alarmist Richard Alley of Penn State.

We have photographic evidence that *Picea Glauca*, White Spruce, grew on the north shore of the

Tuktoyaktuk Peninsula in far northern Canada, on the Arctic Ocean, radiocarbon dated to some 5,000 years ago. Today there are no trees, because it is too cold now for trees; it is tundra today.

We have fossil <u>footprint evidence</u> that human ancestors roamed what is now England's East Anglia ~850,000 years ago. We have Ice Core records that interglacials occur about 100,000 years apart, and the previous interglacial, the Eemian, was 4C warmer than today, so warm that Hippos lived in the Thames and Rhine Valleys.

There is clear evidence that current climate warming is NOT the "Existential Threat" proclaimed the UN and Biden.



Facts that we determined from study of climate history and human history are clear.

Humans and human ancestors have been with us for probably 3 million years, and it has been more than 2C warmer than the so-called "UN Limit" many times in the past and humans survived, even thrived.

WE are the proof. WE are here.

CRIES OF ALARM

https://www.usnews.com/news/national-news/articles/2021-04-22/biden-countries-need-to-step-up-on-climate-change-the-existential-crisis-of-our-time



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Biden: Countries Need to Step Up on Climate Change, the 'Existential Crisis of Our Time'

The president committed the U.S. to cutting greenhouse gas emissions by 50-52% from 2005 levels by 2030.

By Cecelia Smith-Schoenwalder | April 22, 2021, at 9:46 a.m.

President Joe Biden on Thursday called on countries to "step up" and take further action on climate change in order to "overcome the existential crisis of our time" while kicking off a two-day virtual summit.

Just hours before the climate change summit, the White House formally announced a new commitment to cut greenhouse gas emissions by 50-52% from 2005 levels by 2030.

Biden reiterated this goal in his opening remarks, saying the U.S. "sets out on the road to cut greenhouse gases in half by the end of this decade."

https://www.foxnews.com/politics/biden-climate-change-greatest-threat-us-security



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POLITICS - Published June 9, 2021 10:26pm EDT

Biden warns climate change is 'greatest threat' to US security: 'This is not a joke'

The president said he would speak to key European allies about a unified approach to combating climate change

Newsweek

U.S. Secretary of Defense Lloyd Austin Calls Climate Change 'An Existential Threat'

BY **MEGHAN ROOS** ON 5/7/21 AT 10:44 AM EDT

At the Leaders Summit on Climate convened by President Joe Biden, Earth Day, April 22, Austin told a virtual gathering of the world's leaders, including Russia's Vladimir Putin and China's Xi Jinping, that climate change is a national security threat not just for his nation, but for all nations.

"Today, no nation can find lasting security without addressing the climate crisis," he said.

"We face all kinds of threats in our line of work, but few of them truly deserve to be called existential. The climate crisis does."

Bob comment: **There's no climate crisis or climate emergency**. 20th Century Dust Bowl Years were hotter, drier; see for instance, https://casf.me/wp-content/uploads/2019/09/Examining-the-Hypothesis_with-all-of-the-carbon-dioxide-in-the-air-today_Surface-Temperaturs-are-at-a-high-in-New-Mexico_24-Sep-2019.pdf

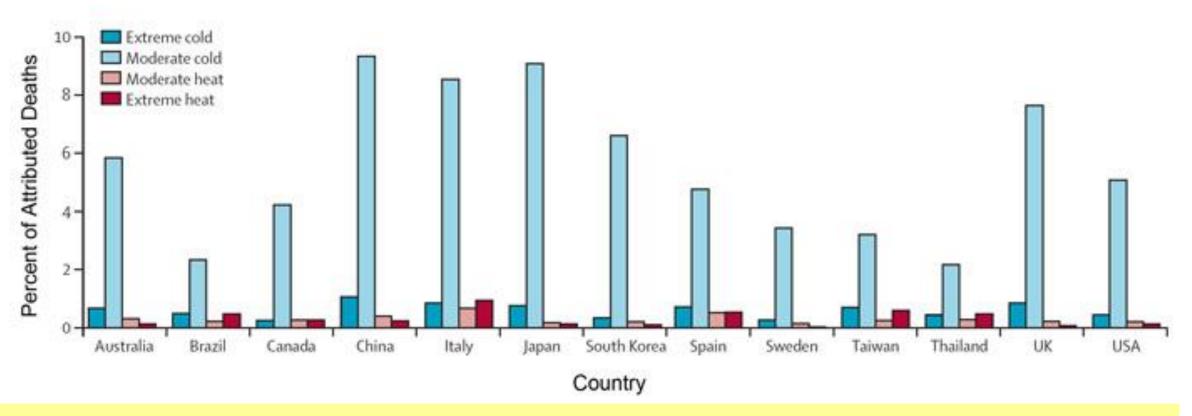
RIGHT AWAY, SOME THINGS DON'T ADD UP

http://www.co2science.org/articles/V18/aug/a11.php

Cold waves kill many more people than heat waves.

If the Alarmists were correct, there'd be a lot more deaths from heat than cold. The Climate Alarm makes no sense.

Percent of Deaths Due to Moderate and Extreme Episodes of Heat and Cold

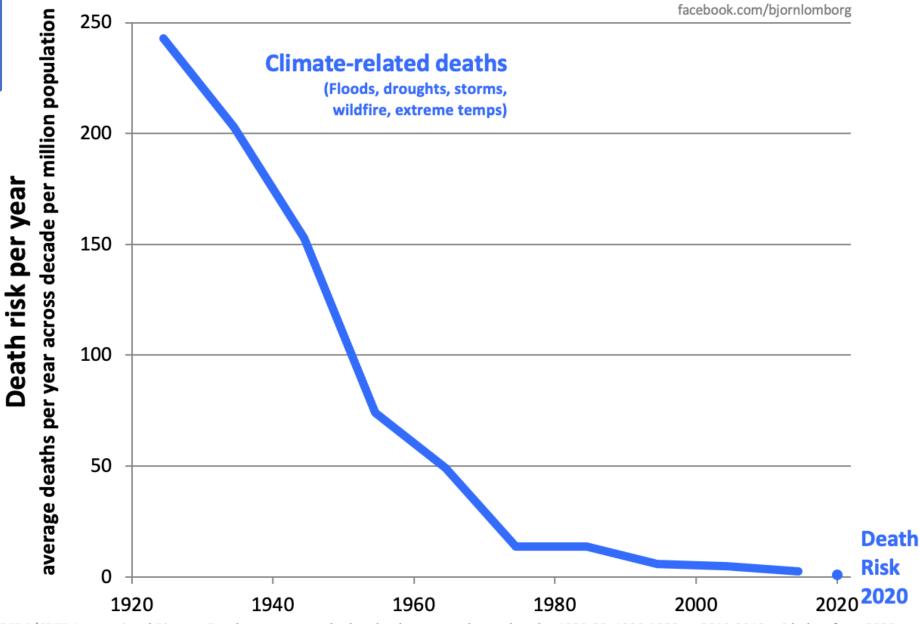


Fraction of all-cause mortality attributable to moderate and extreme hot and cold temperature by country. (Source: Gasparrini et al., 2015).

After 100 years of climate change, 'climate related deaths' approach zero

https://climaterealism.com/ wp-content/uploads/2021/01 /climate-related-deaths-1920-2020.png

Climate-related Death Risk 1920-2020

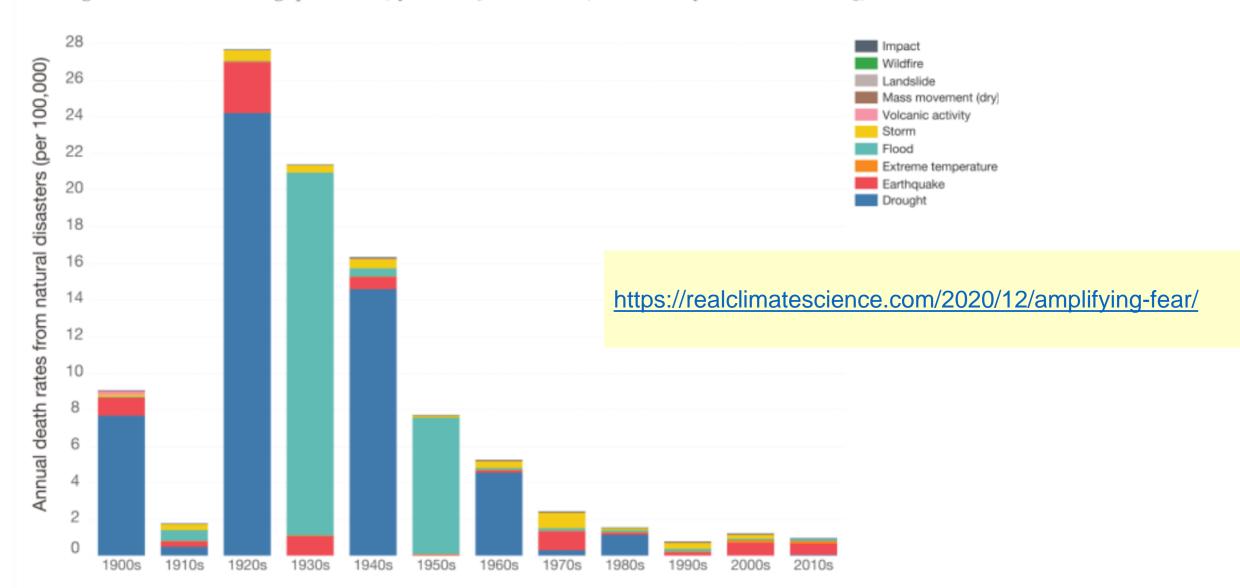


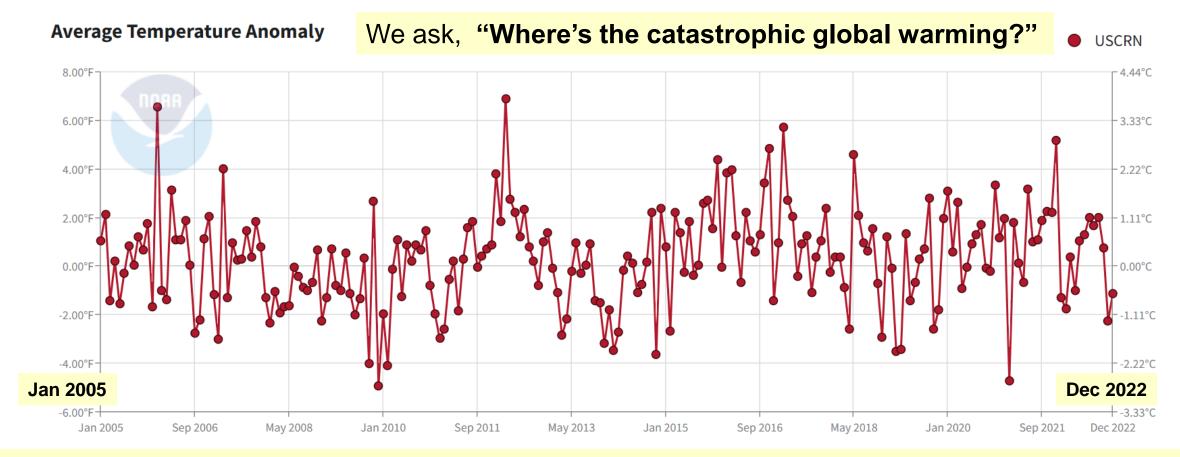
OFDA/CRED International Disaster Database, www.emdat.be, deaths averaged over decades 1920-29, 1930-1939, ... 2010-2019, with data from 2020, as start of next decade, accessed January 1, 2021

Global annual death rate from natural disasters, by decade



Global death rate measured as the number of deaths per 100,000 of the world population. This is given as the annual average per decade (by decade 1900s to 2000s; and then six years from 2010-2015).





From the USA's premiere surface temperature source, the **US Climate Reference Network**. NOAA's National Climatic Data Center (NCDC) commissioned a new Climate Reference Network (CRN) in 2002, completed 2008: stations in pristine locations, optimal measurement environments, state of the art, triple-redundant temperature sensor systems...

USCRN was hailed during the Obama Administration as the...

"Highest quality data, perfect for scientific studies...(an) unimpeachable climate data source for the next 50 years."

Why would anyone pay attention to the Alarmist Forecasts?

Why doesn't the MSM call the Alarmist Forecasts "Worthless?" "Erroneous?" "Miserable?" "Failures?"

The U.S. Climate Change Science Program

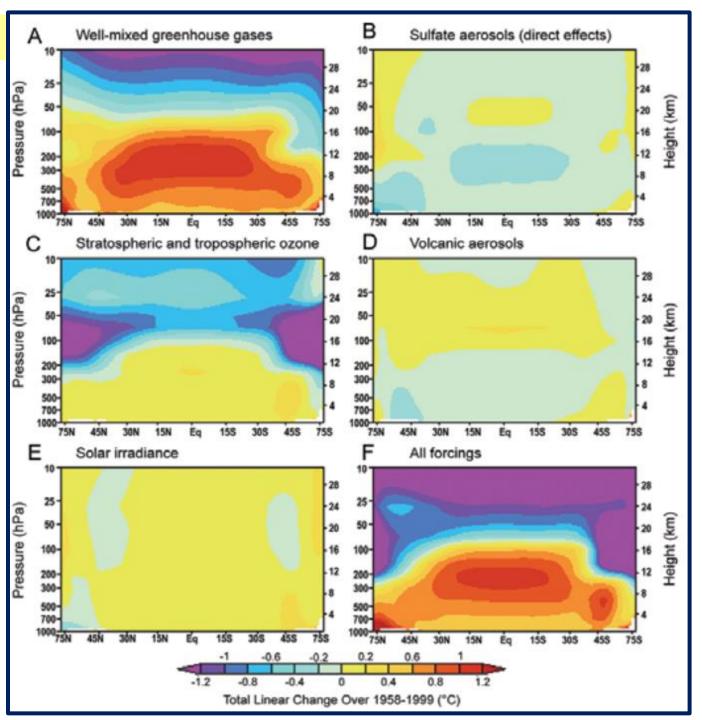
Prediction from NOAA's Geophysical Fluid Dynamics Laboratory (GFDL)

https://www.gfdl.noaa.gov/bibliography/related_files/vr0603.pdf

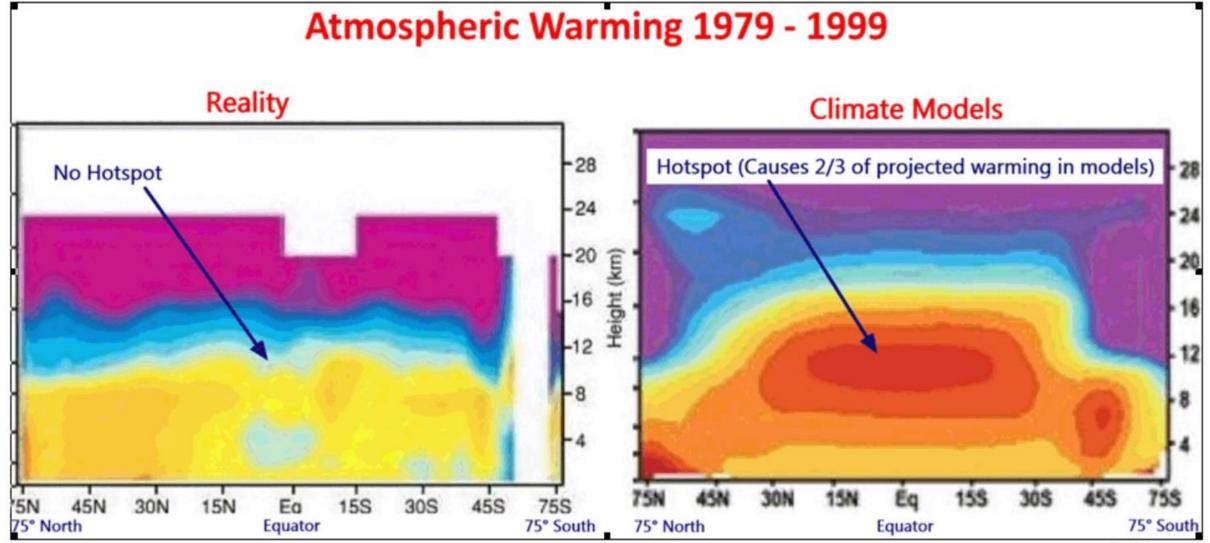
Figure 1.3.

....simulations of the vertical profile of temperature change due to various forcings, and the effect due to all forcings taken together (after Santer et al., 2000)

GFDL, other Alarmist organizations, published that CO2, other greenhouse gases, create a "Hot Spot" ~30,000 ft, extending to ~30 Deg north and south of the equator.



Hot spot in the models upsets thermodynamics, allowing accurate predictions of tropical rainfall patterns. Hot spot inhibits natural rainfall patterns which bring the "rainy season" to tropical Africa & South America and the monsoons of India, Southeast Asia, the Philippines and North America, among others. It's ludicrous that "climate scientists" ignore this fundamental deficiency when advancing climate forecasts.



https://www.scienceunderattack.com/blog/ 2021/2/22/latest-computer-climate-modelsrun-almost-as-hot-as-before-71

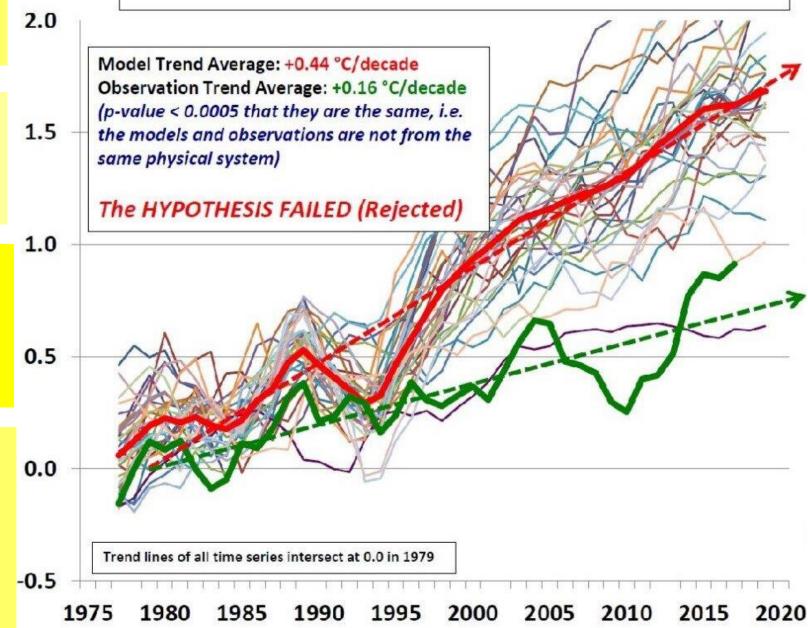
X-Axis Time (Years)

Y Axis, Colors, Model Predicted Temps C Y-Axis (Green) Measured Temps

The hypothesis, that the model predicted temperatures come from the same data set as the measured temperatures, fails.

"...figures were compiled by Meteorologist Dr. John Christy, who is Director of the Earth System Science Center at the University of Alabama in Huntsville and an expert reviewer of the upcoming sixth IPCC (Intergovernmental Panel on Climate Change) report."

5-Year Running Mean of Tropical Temperature CMIP5 Anomalies of 300-200 hPa Layer (1979-2019)

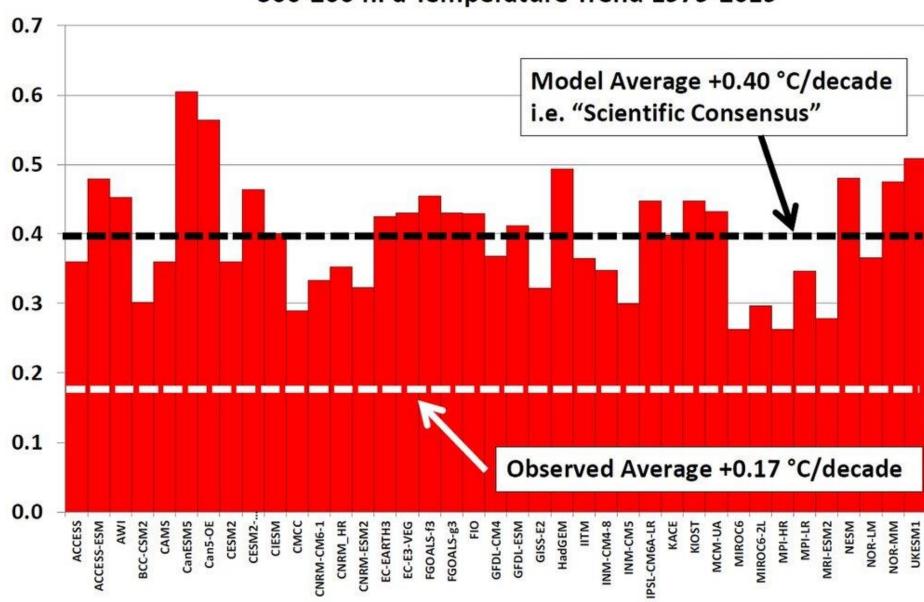


39 IPCC Climate Model Simulations CMIP6 300-200 hPa Temperature Trend 1979-2019

X-Axis: individual model predictions (Red)

Y-Axis: Black Dashed Line Average model warming.

Y-Axis: White Dashed Line Observed warming.



Gore: Arctic Ice May Soon Vanish in Summer

DECEMBER 14, 2009 / 10:37 AM / CBS/AP



Al Gore has told the U.N. climate conference that new data suggests the Arctic polar ice cap may disappear in the summertime as soon as five to seven years from now.

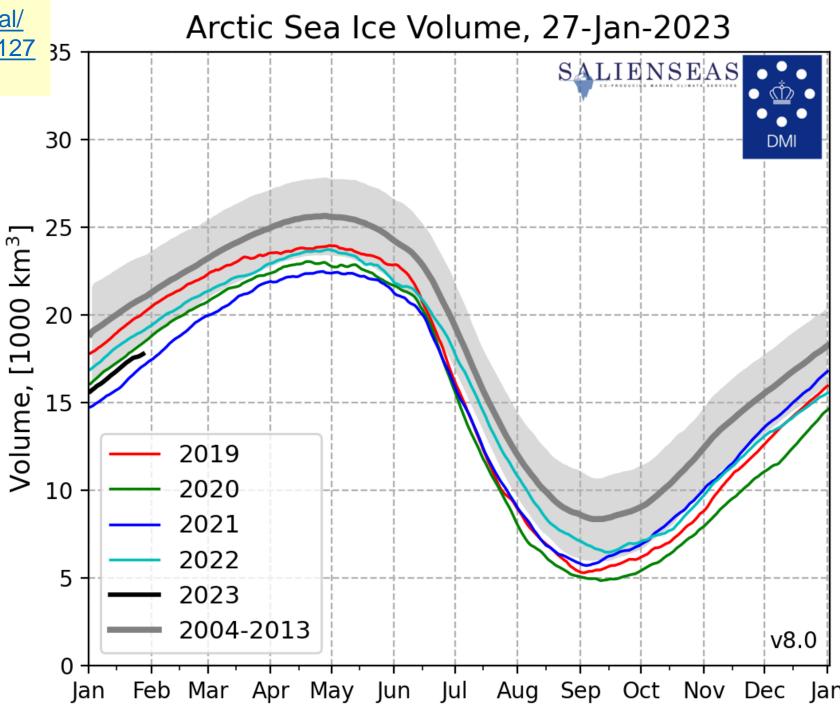
Clicking through a slide show Monday in a packed side event, the former U.S. vice-president joined the foreign ministers of Norway and Denmark in presenting two new reports on melting Arctic ice.

http://polarportal.dk/fileadmin/polarportal/ sea/CICE_curve_thick_LA_EN_20230127 35 .png

This is a plot of the volume of Arctic Sea Ice from the Polar Portal of the Danish Meteorological Institute.

Polar Ice Reaches a minimum about 8 September every year.

Al Gore's forecast was off every year by at least 5,000 Cubic Kilometers.



https://cei.org/blog/wrong-again-50-years-of-failed-eco-pocalyptic-predictions



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Wrong Again: 50 Years of Failed Eco-pocalyptic Predictions

Myron Ebell • Steven J. Milloy • 09/18/2019





The Boston Globe

Thursday, April 16, 1970

Scientist predicts a new ice age by 21st century

the present rate, a pollution expert predicted yesterday.

rate of increase in electric the neighboring oceans." power generation con- Lodge, speaking at the nental United States.

Air pollution may oblit- Lodge, a scientist at the erate the sun and cause a national center for Atmosnew ice age in the first pheric Research in Boulthird of the next century if der, Colo., said the napopulation continues to tion's states, with the exgrow and the earth's re- ception of Alaska and Hasources are consumed at waii, "are already consuming more oxygen than their own green plants re-James P. Lodge Jr. also place and that we are imwarned that if the current porting the balance from

tinues, the demands for Institute of Environmental cooling water will boil dry Sciences, at the Sheraton the entire flow of the riv- Boston, said three factors ers and streams of conti- could prevent these disasters: population control, a Looking into his less wasteful standard of "smoggy crystal ball," living, and a major tech-

New York Times: Most East Coast Beaches Gone By 2020

Posted on March 11, 2021 by tonyheller

In 1995, the New York Times predicted "most of the beaches on the East Coast of the United States would be gone in 25 years"

https://cei.org/blog/wrong-again -50-years-of-failed-eco-pocalyptic -predictions/

The New York Times

MONDAY, SEPTEMBER 18, 1995

many beaches around the world. At the most likely rate of rise, some experts say, most of the beaches on the East Coast of the United States would be gone in 25 years. They are already disappearing at an average of 2 to 3 feet a year.

https://cei.org/blog/wrong-again-50-years-of-failed-eco-pocalyptic-predictions/

Oaily Facts

REDLANDS, CALIFORNIA, TUESDAY, OCTOBER 6, 1970

Dr. Ehrlich, outspoken ecologist, to speak

"Giving aspirins to cancer victims" is what Dr. Paul R. Ehrlich thinks of current proposals for pollution control. No real action has been taken to save the environment, he maintains.

And it does need saving. Ehrlich predicts that:

The oceans will be as dead as Lake Erie in less than a decade.

The DDT in our fatty tissues has reached levels high enough to cause brain damage and cirrhosis of the liver.

America will be subject to water rationing by 1974 and food rationing by 1980.

University of California Extension, Riverside and World Affairs Council of Inland Southern California will present the outspoken author of "The Population Bomb" and the hero of the ecology movement tomorrow at 8 p.m. He will speak in the gynnasium on the UCR campus.



DR. PAUL EHRLICH

https://www.newsbusters.org/blogs/scott-whitlock/2015/06/12/flashback-abcs-08-prediction-nyc-under-water-climate-change-june



Free Speech Culture Business Latino Latest

FLASHBACK: ABC's '08 Prediction: NYC Under Water from Climate Change By June 2015

Scott Whitlock 12 Jun 2015, 0730

New York City underwater? Gas over \$9 a gallon? A carton of milk costs almost \$13? Welcome to June 12, 2015. Or at least that was the wildly-inaccurate version of 2015 predicted by ABC News exactly seven years ago.

Appearing on Good Morning America in 2008, Bob Woodruff hyped Earth 2100, a special that pushed apocalyptic predictions of the then-futuristic 2015.

The segment included supposedly prophetic videos, such as a teenager declaring, "It's June 8th, 2015. One carton of milk is \$12.99." (On the actual June 8, 2015, a gallon of milk cost, on average, \$3.39.) Another clip featured this prediction for the current year: "Gas reached over \$9 a gallon." (In reality, gas cost an average of \$2.75.)



FLASHBACK: ABC's '08 Prediction: NYC Under Water from Climate Change By June 2015

As one expert warns that in 2015 the sea level will rise quickly, a visual shows New York City being engulfed by water. The video montage includes another unidentified person

predicting that "flames cover hundreds of miles."

Then-GMA co-anchor Chris Cuomo appeared frightened by this future world. He wondered, "I think we're familiar with some of these issues, but, boy, 2015? That's seven years from now.

Could it really be that bad?"



https://www.salon.com/2001/10/23/weather/

Stormy Weather

Floods, droughts, hurricanes and disease outbreaks — an expert explains why climate changes give us yet another reason to find terror in the skies by Suzy Hansen October 23, 2001 7:41pm (UTC) (Paragraphing, bolding, added)

"...While doing research 12 or 13 years ago, I met Jim Hansen, the scientist who in 1988 predicted the greenhouse effect before Congress. I went over to the window with him and looked out on Broadway in New York City and said,

"If what you're saying about the greenhouse effect is true, is anything going to look different down there in 20 years?"

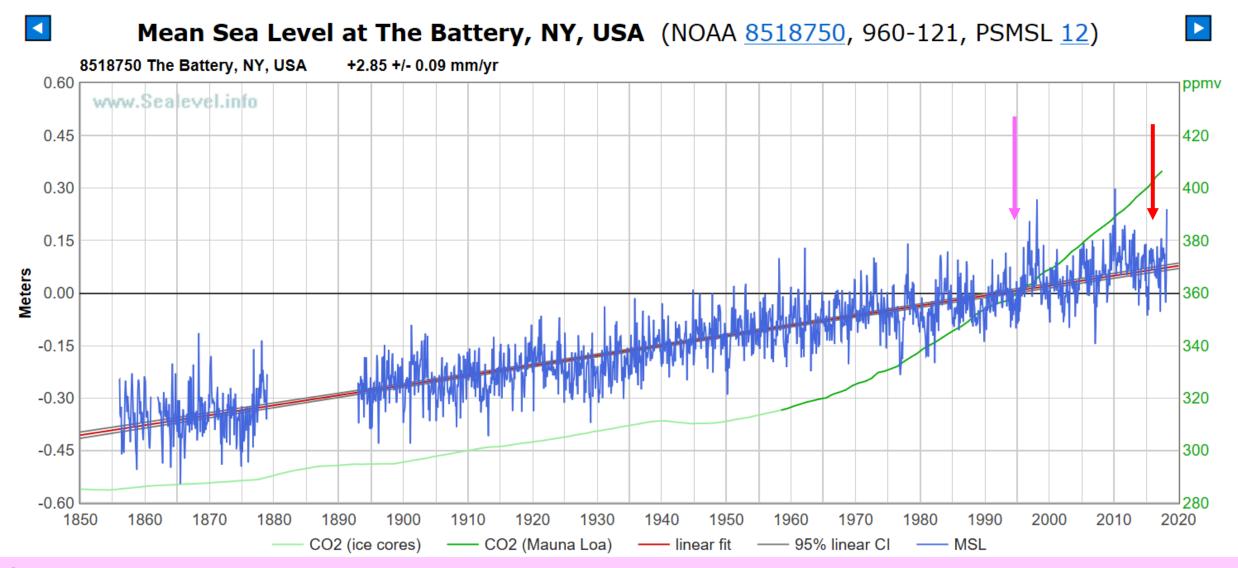
He looked for a while and was quiet and didn't say anything for a couple seconds.

Then he said, "Well, there will be more traffic." I, of course, didn't think he heard the question right.

Then he explained,

"The West Side Highway [which runs along the Hudson River] will be under water..."

Sealevel.info → Data → 8518750



Suzy Hansen interviews James Hansen in 1989, purple arrow. Tide gage a few miles away at the Battery is -0.01 m Twenty years later, 2009, red arrow, sea level at the Battery is about +0.08 m, a rise of 0.09 m or 3.5 inches. Diurnal range between high and low tide at the Battery is 5.06 ft, 60.7 inches.



Hudson River Greenway on the Upper West Side of Manhattan, George Washington Bridge in the distance. The greenway is the walkway/bikeway.

The West Side Highway is to the right, a couple hundred feet.

The Hudson River clearly is not flooding the West Side Highway.

James Hansen's forecast is a failure.

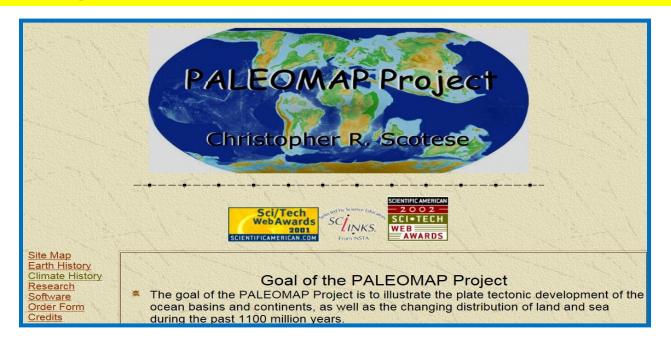
Time Domain: Last 600 million years

Since the Cambrian "explosion of life" across Ocean sea floors -- when fossils became common.

References for Temperature and Carbon Dioxide data

http://www.scotese.com/

http://ajsonline.org/content/301/2/182.abstract



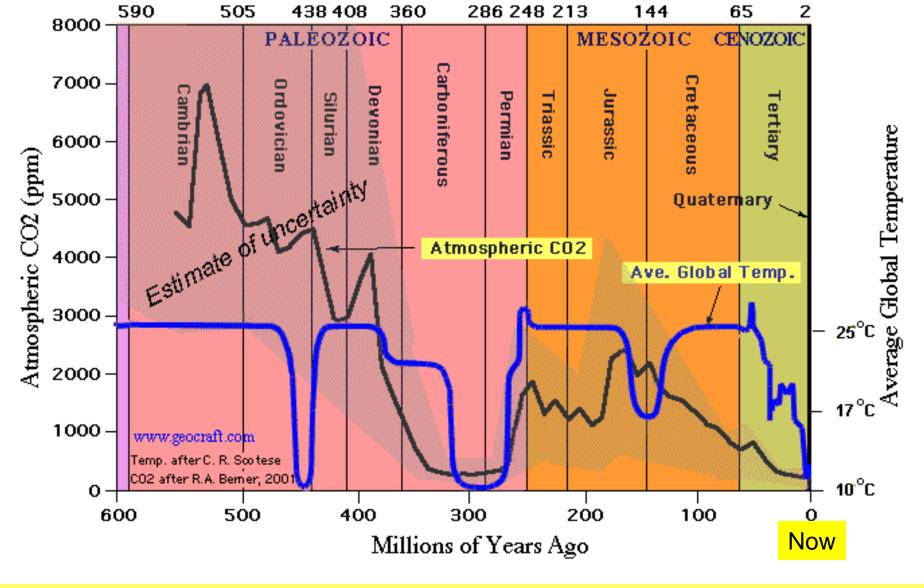
[AMERICAN JOURNAL OF SCIENCE, Vol. 301, February, 2001, P. 182–204]

GEOCARB III: A REVISED MODEL OF ATMOSPHERIC ${\rm CO}_2$ OVER PHANEROZOIC TIME

ROBERT A. BERNER and ZAVARETH KOTHAVALA

Department of Geology and Geophysics, Yale University, New Haven, Connecticut 06520-8109

ABSTRACT. Revision of the GEOCARB model (Berner, 1991, 1994) for paleolevels of atmospheric CO₂, has been made with emphasis on factors affecting CO₂ uptake by continental weathering. This includes: (1) new GCM (general circulation model)

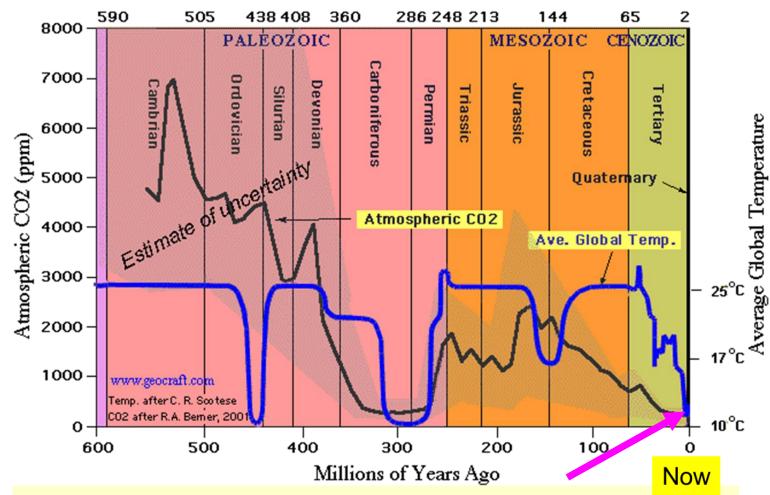


X-Axis Time: Cambrian 600 Million Years ago, Left Present on Right
Y-Axis Blue Average Global Temperature, Scotese Paleomap Project Climate Tab
Y-Axis Black Atmospheric <CO2> Berner & Kothavala, Am J. Sci., 2001, p 182-204

The white rocks are the Cambro-Ordovician <u>Bliss Sandstone</u> set down about 500 million years ago on a sea floor but are now almost standing vertically. http://archives.datapages.com/data/meta/bulletns/1953-56/images/pg/00370008/2050/20540_firstpage.pdf



MOST OF GEOLOGIC HISTORY THERE WAS A LOT MORE CO2, and IT WAS A LOT WARMER.



The Magenta Arrow shows the present time, temp and CO2 levels

IPCC, other Alarmist Organizations posit that warming of 2C above the modern minimum in the Little Ice Age is an "Existential Threat" to Humanity, but warmer is better for plants and animal life.

Important Data from this Chart of Geologic History:

Chart shows last 600 million years during which the fossil record of plants and animals is clear.

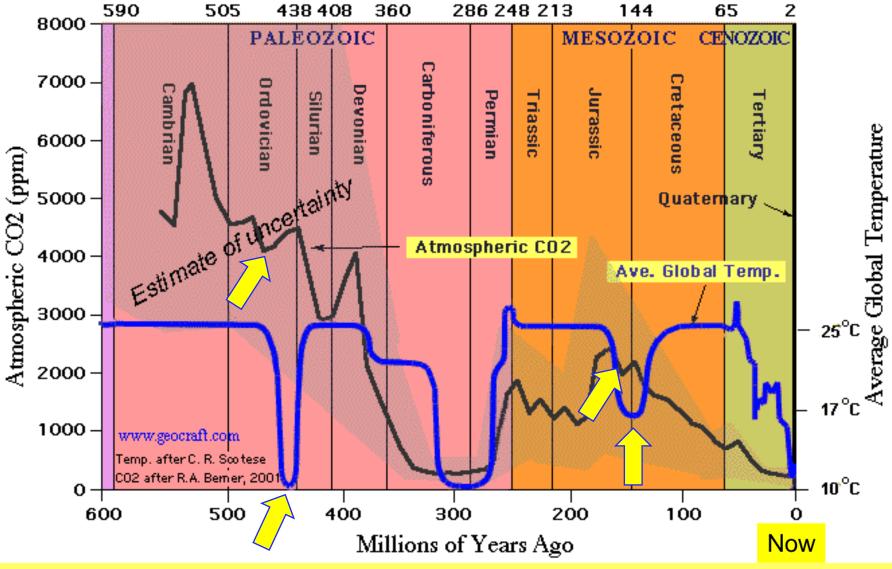
There is no thermal runaway as posited by many alarmist models, despite <CO2> being 17X more concentrated than now.

The Cambrian explosion of Trilobites and' Brachiopods and the spread of Fish during the Devonian happened during warm times.

The long reign of Dinosaurs from the late Permian to the top of the Cretaceous, ~200 million years, was during warm times with some 1800-2800 PPM CO2.

Humans, animals, and plants are carbonbased life forms. Life loves warm temperatures and lots of CO2 in the air. <Next Slide>



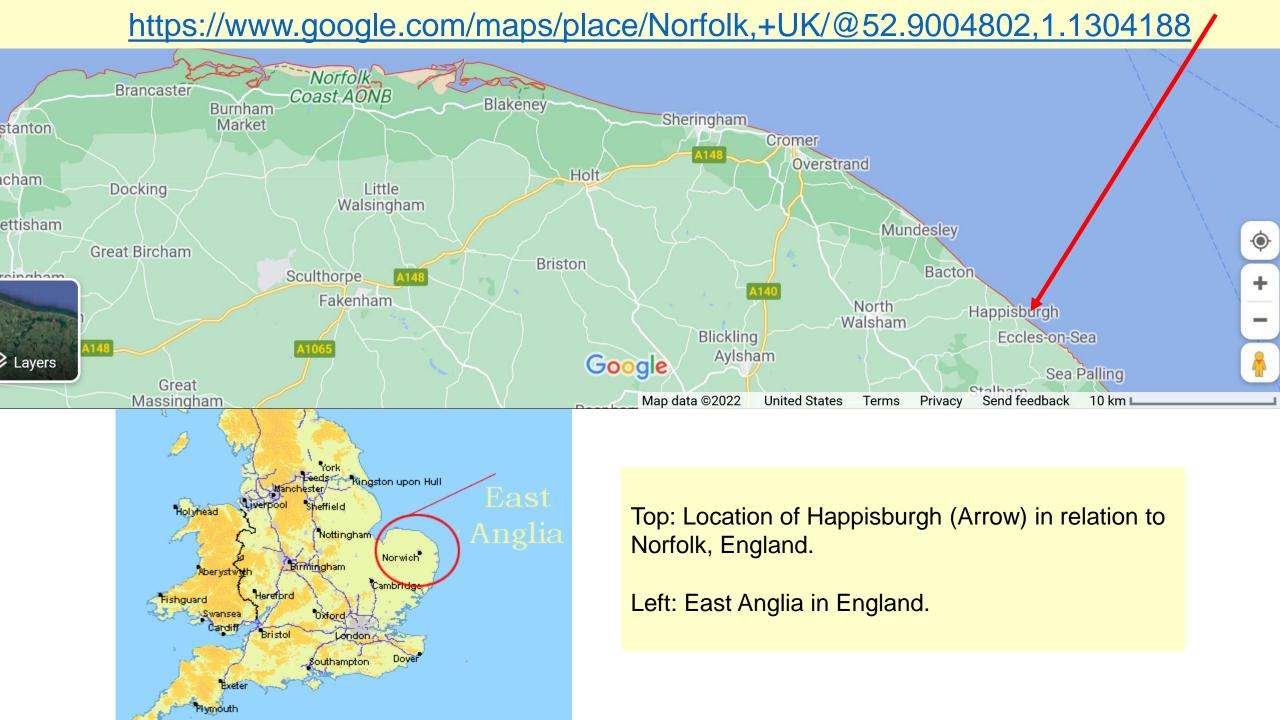


SIDEBAR ON CO2 AND TEMPERATURE: If atmospheric <CO2> effect has such a great effect on Temperature and the feedbacks are so strong, why, at the end of the Ordovician, 450M years BP, did temperatures fall so precipitously, when <CO2> INCREASED from 4100 to 4500 PPM? Similar effect at end of Jurassic. Yellow Arrows; <CO2> increased but temperatures fell, a lot.

TIME DOMAIN: LAST 800,000 years

We have discovered some new information revealing that our human ancestors inhabited what we now call England over 800,000 years ago, near the present town of Happisburgh, England, the area pictured below.





Think about that. Human ancestors inhabited part of East Anglia, England, about 800,000 to 900,000 years ago.



Human ancestor footprints were found in mudstone dated from that period, in the soft rock at the foot of the cliff of Happisburgh, near the location in this photo, from the British Museum.

The earliest human footprints outside Africa

In May 2013 a team of scientists led by the British Museum, Natural History Museum and Queen Mary University of London discovered a series of footprints left by early humans in ancient estuary mud over 800,000 years ago at Happisburgh, Norfolk. Nicholas Ashton, Curator of Palaeolithic and Mesolithic collections at the British Museum has been working on the Happisburgh Palaeolithic excavations.



https://blog.britishmuseum.org/the-earliesthuman-footprints-outside-africa-2

https://blog.britishmuseum.org/the-earliest-human-footprints-outside-africa-2/

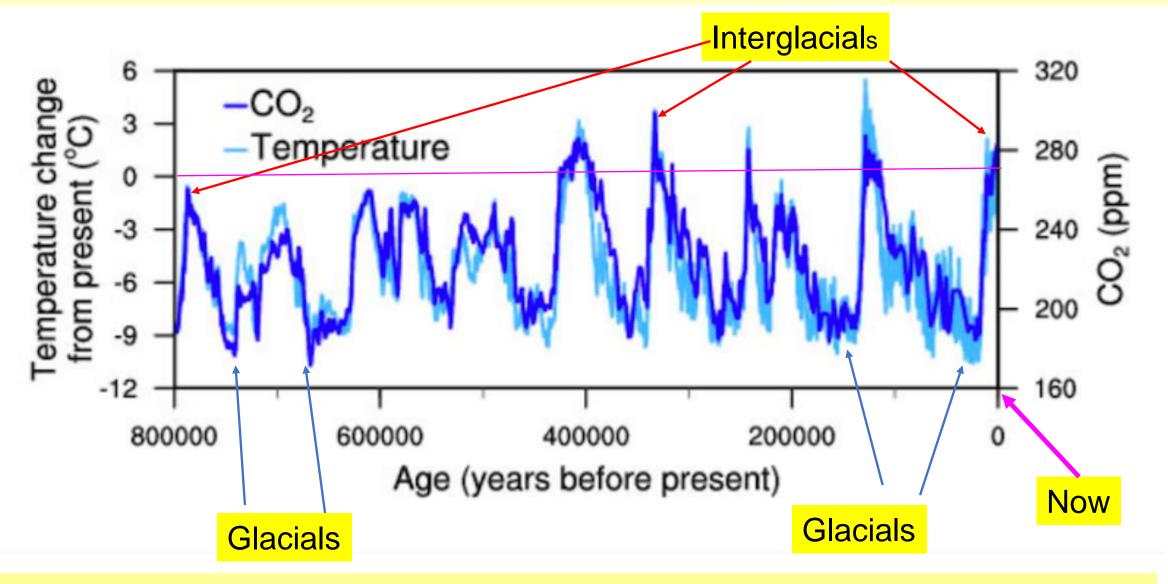
We found them by pure chance in May last year. We were about to start a geophysics survey on the foreshore, when an old-time friend and colleague, Martin Bates from Trinit y St David's University, pointed out the unusual surface. The site lies beneath the beach sand in sediments that actually underlie the cliffs. The cliffs are made up of soft sands and clays, which have been eroding at an alarming rate over the last ten years, and ever more so during the latest winter storms. As the cliffs erode they reveal these even earlier sediments at their base, which are there for a short time before the sea washes them away.



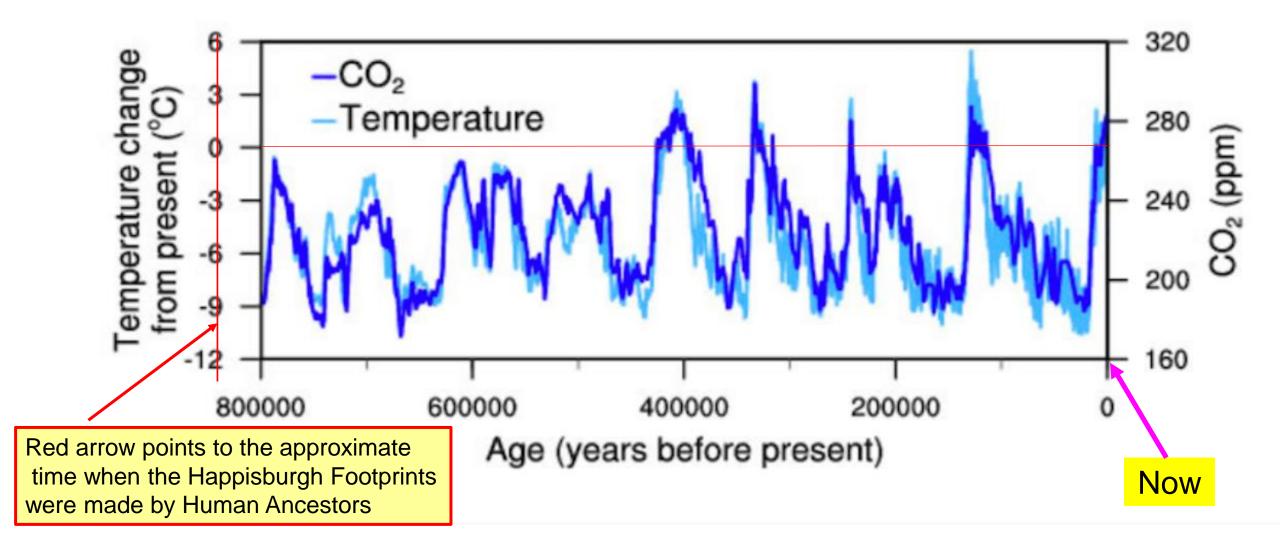


Early human footprints revealed at Happisburgh, UK

https://www.wunderground.com/cat6/Snow-Stars-and-Stress-Science-Concordia-Station

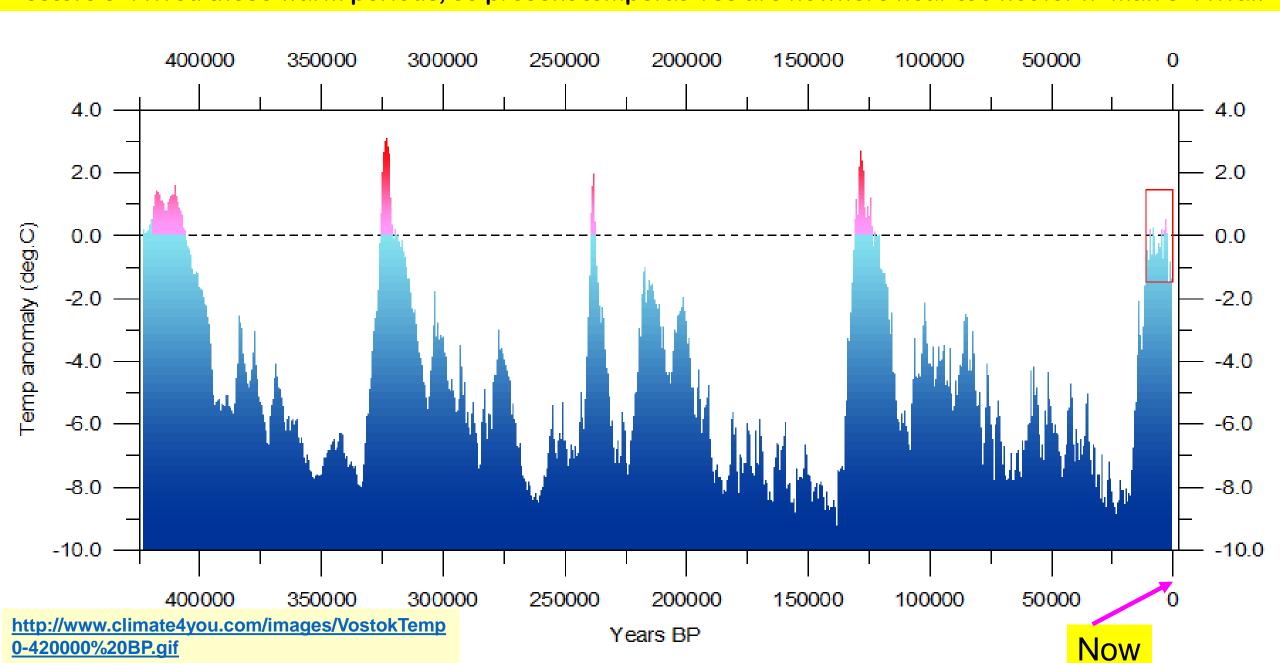


Changes in Temperatures and CO2 concentration over the past several hundred thousand years, based on analysis of the EPICA Dome C ice core from Antarctica.



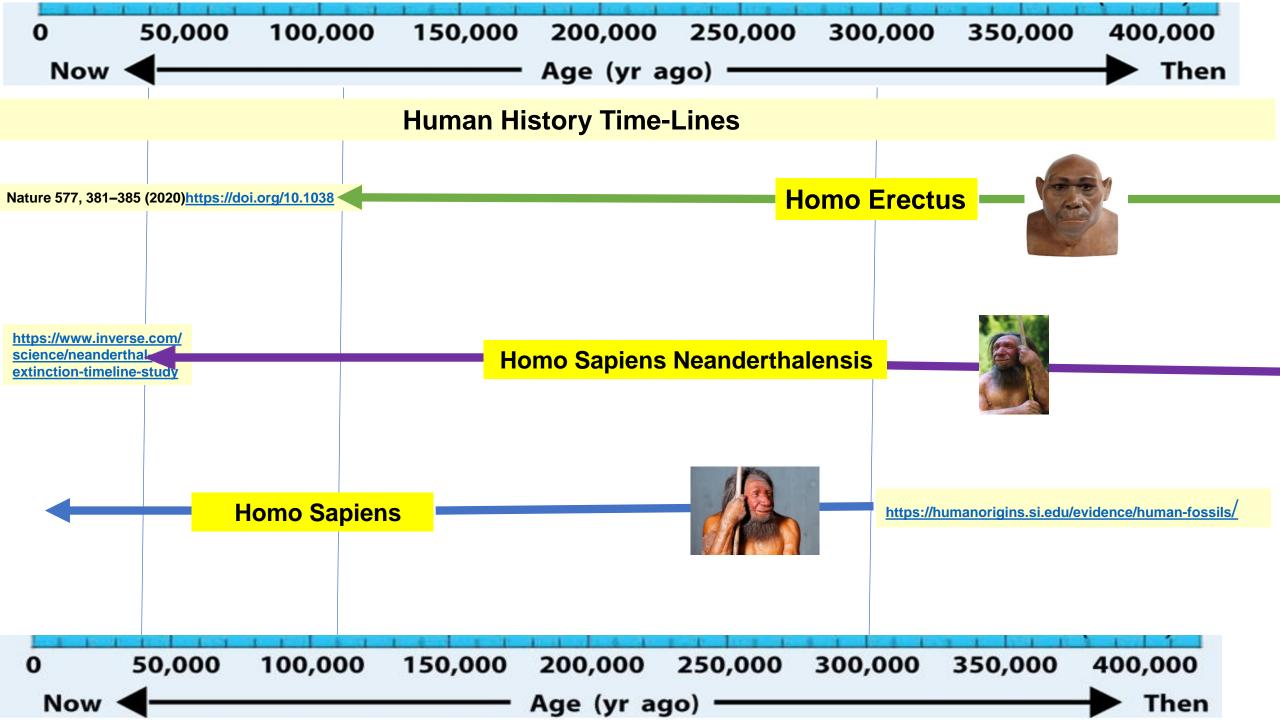
Changes in Temperatures and CO2 concentration over the past several hundred thousand years, based on analysis of the EPICA Dome C ice core.

The data colored in red and hot pink show times in the past temperatures were hotter than today. Our ancestors survived those warm periods, so present temperatures are nowhere near too hot for human survival.



A glimpse of human history, as we know it today





Consider the human history time-line when compared with several climate history time-lines.

First, comparing with the Vostok Ice Cores, Antarctica, in the following slides

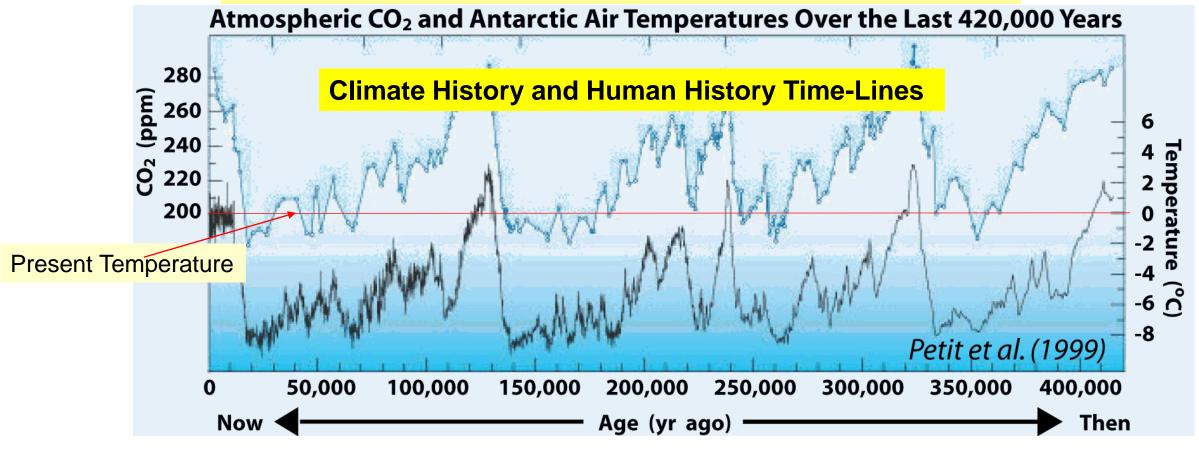
Later, a "multi-proxy" temperature time history from North America, published by Ljungqvist, which shows the "thousand year" Bond Cycles in context with past temperatures

Third, a time series from the GRIP Ice Core from Greenland, featured in this video, https://casf.me/wp-content/uploads/2021/07/Global-Warming.mp4

In each of these examples, the present warming is but one of **numerous climate cycles**, and show that the **present warming is bringing a return to warmer temperatures** which have occurred in the recent past.

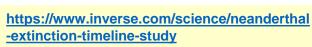
There is nothing in the present warming which would lead a critically thinking person to think that the present warming is anything other than a continuation of benign warming bringing Earth closer to warm periods of the recent past.

https://i0.wp.com/www.geo.arizona.edu/BGDL/images/Vostok_CO2_airt.gif



Nature 577, 381-385 (2020). https://doi.org/10.1038

Homo Erectus



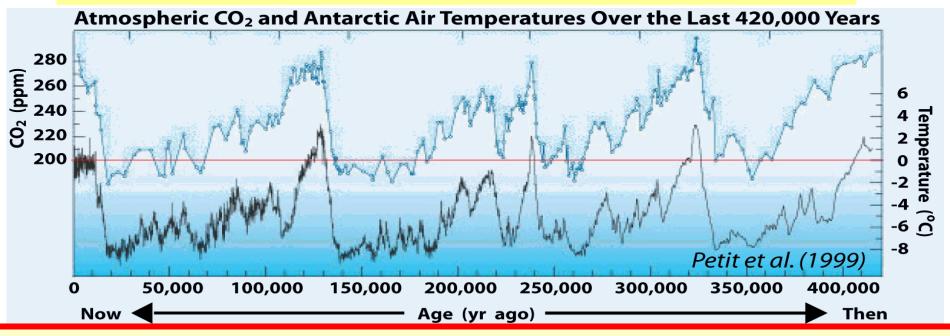
Homo Sapiens Neanderthalensis





https://humanorigins.si.edu/evidence/human-fossils/

https://i0.wp.com/www.geo.arizona.edu/BGDL/images/Vostok_CO2_airt.gif



How can the present rate of climate change be a "Climate Emergency" and "An Existential Threat," when present temperatures are not nearly as warm as 1000, 2000 and 8000 years ago?

When Homo Sapiens survived the Eemian Interglacial, 130,000 years ago, and the interglacial 250,000 years ago? When Neanderthals survived the interglacials of 125,000, 250,000, 330,000 and 410,000 years ago?

Homo Erectus



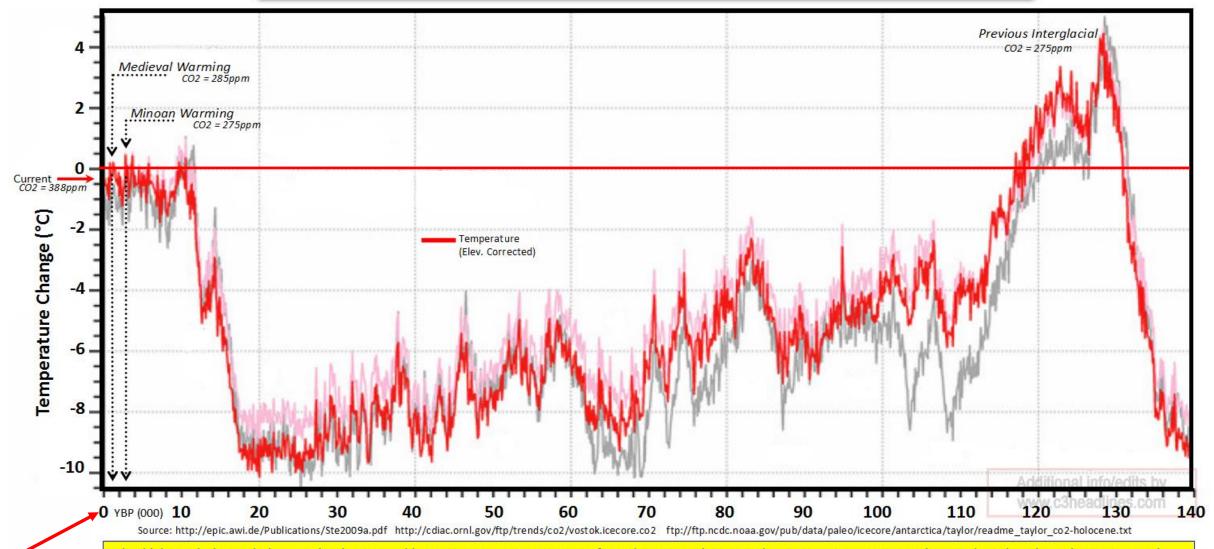






TIME DOMAIN: Last 140,000 years

Medieval & Minoan Period Temperatures Higher Than Modern Temps High Resolution Antarctica Ice Core Data

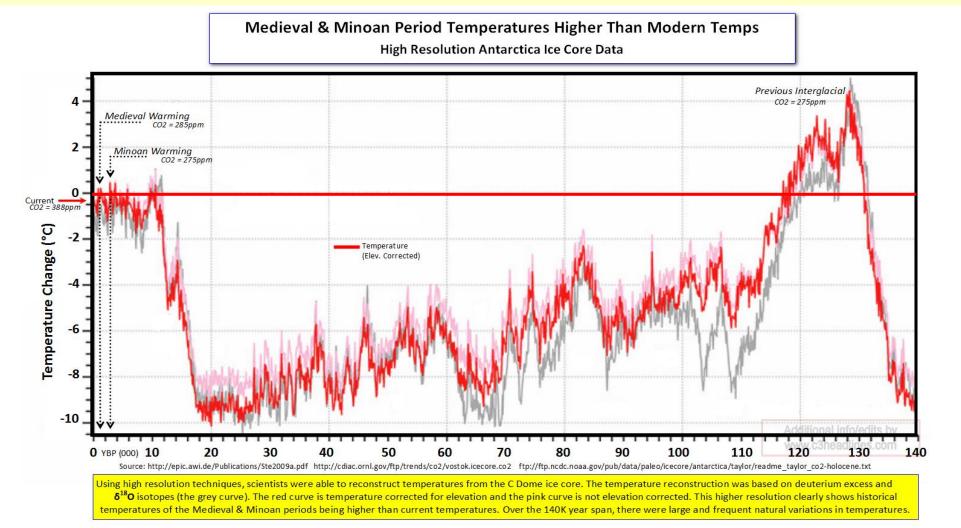


Using high resolution techniques, scientists were able to reconstruct temperatures from the C Dome ice core. The temperature reconstruction was based on deuterium excess and δ^{18} O isotopes (the grey curve). The red curve is temperature corrected for elevation and the pink curve is not elevation corrected. This higher resolution clearly shows historical temperatures of the Medieval & Minoan periods being higher than current temperatures. Over the 140K year span, there were large and frequent natural variations in temperatures.

Now

https://wattsupwiththat.files.wordpress.com/2012/10/49ff5-6a010536b58035970c0134840e51fd970c-pi.png

This high-resolution temperature time history from the Vostok Ice Core in Antarctica shows the Eemian, the previous interglacial period, **over 4C warmer than the present**. During the Eemian, <CO2> was 275 Parts per Million, and Hippos were in the Rhine and Thames Valleys and sea levels were ~ 4m higher than at present. Human ancestors clearly survived the Eemian, so claims of Climate Catastrophe if temperatures exceeded an IPCC-declared critical 1.5C or 2C warmer than pre-Industrial times are nonsense. It happened before, in the Eemian.



TIME DOMAIN: Last 50,000 years

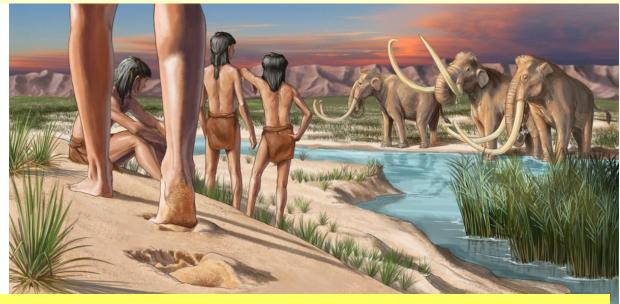
Pendejo Cave is a geological feature and archaeological site located in southern New Mexico about 20 miles east of Orogrande. https://en.wikipedia.org/wiki/Pendejo_Cave
Faunal remains in the cave have been dated to possibly as old as 55,000 years.

"The latest research shows that humans have been living in North America and Tularosa Basin for at least 23,000 years..." https://www.nps.gov/whsa/learn/nature/fossilized-footprints.htm. "Footprints across White Sands have been found coexisting and interacting with extinct ice age animals. One set of footprints shows what appears to be humans stalking a giant sloth...."



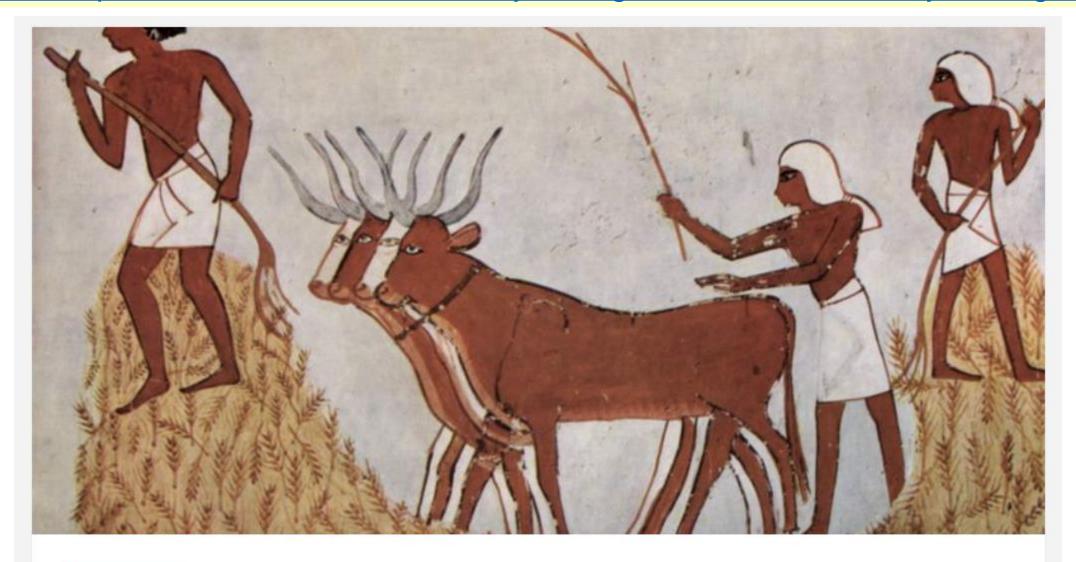
Fossil footprints dated 23,000 years before present, left, are present in the gypsum soil at White Sands National Park.

Interpretive image right, shows teenagers who left the footprints at White Sands.



Humans lived in the Tularosa Basin of southern New Mexico during the coldest temperatures of the Wisconsin Ice Age, during periods of significant natural climate change, much stronger changes than the temperature changes of today.

https://wattsupwiththat.com/2016/06/25/why-did-agriculture-start-13000-years-ago/



AGRICULTURE

Why did agriculture start 13,000 years ago?

Temperature history from Greenland Ice Sheet using the GISP2 Ice Core.

Important Facts:

Depth (coldest temperature) of the Wisconsin Ice Age was ~23,000 years ago.

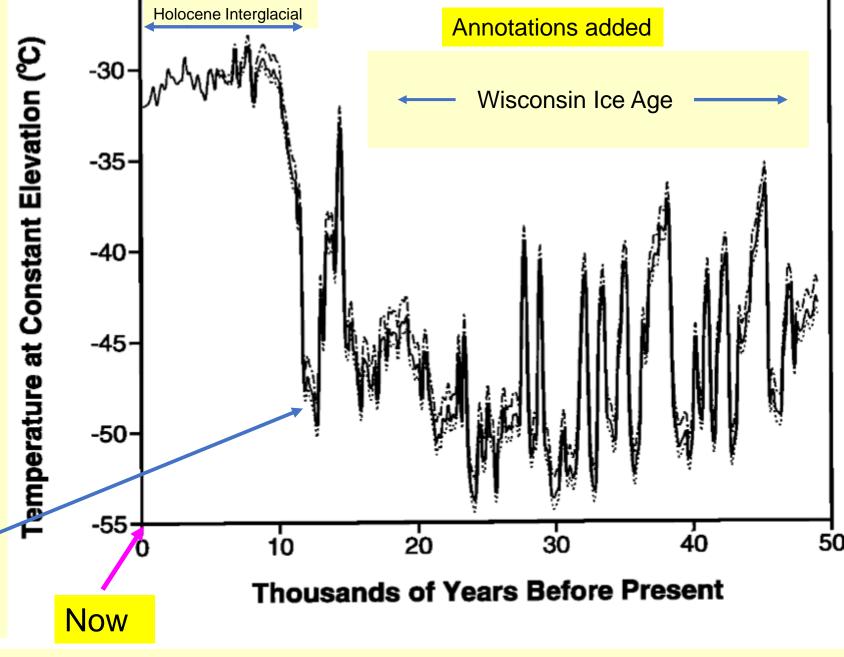
Humans could have not caused any of the temperature changes shown here.

The Wisconsin Ice Age featured severe temperature fluctuations unlike any in the past 2,000 or 10,000 years.

About 13,000 years ago it got quite warm, almost as warm as today.

Then, temperatures plummeted, briefly. The Younger Dryas Cold Period.

Our Holocene Interglacial followed.



Cuffey, K.M. and Clow, G.D. (1997) Temperature, Accumulation and Ice Sheet Elevation in Central GREENLAND through the Last Deglacial Transition. Journal of Geophysical Research, 102, 26383-26396. https://doi.org/10.1029/96JC03981

"Greenland temperatures over the past 25,000 years recorded in the GISP2 ice core.

Strong, abrupt warming is shown by nearly vertical rise of temperatures, strong cooling by nearly vertical drop of temperatures."

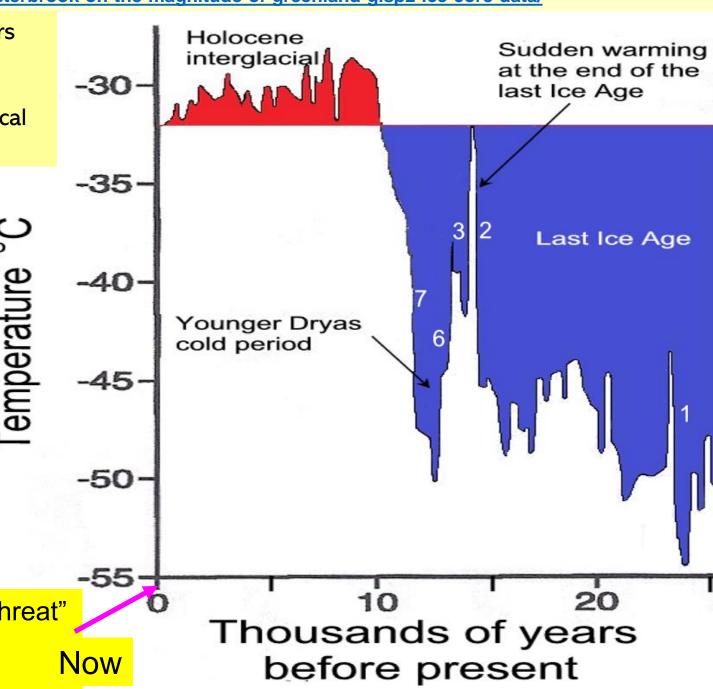
Human ancestors' footprints are recorded in fossil footprints ~850,000 years ago in East Anglia, in present England,

https://blog.britishmuseum.org/the-earliesthuman-footprints-outside-africa-2

GISP2 data show it was some 3C warmer about 7,000-8,000 years before the present.

The GISP2 data during the Holocene Interglacial, as above, strongly hint the existence of ~1000-year Bond Cycles were present in the snow which became Greenland Ice.

Already we see that the cries of "Existential Threat" from the present warming are false alarms. Humans thrived in the warmer temperatures.



Prior to 13,000 years before present, atmospheric <CO2> levels were so low that plants suffered "Carbon Starvation" according to stunted Juniper fossils recovered from the La Brea Tar Pits in Los Angeles, California.



Carbon starvation in glacial trees recovered from the La Brea tar pits, southern California

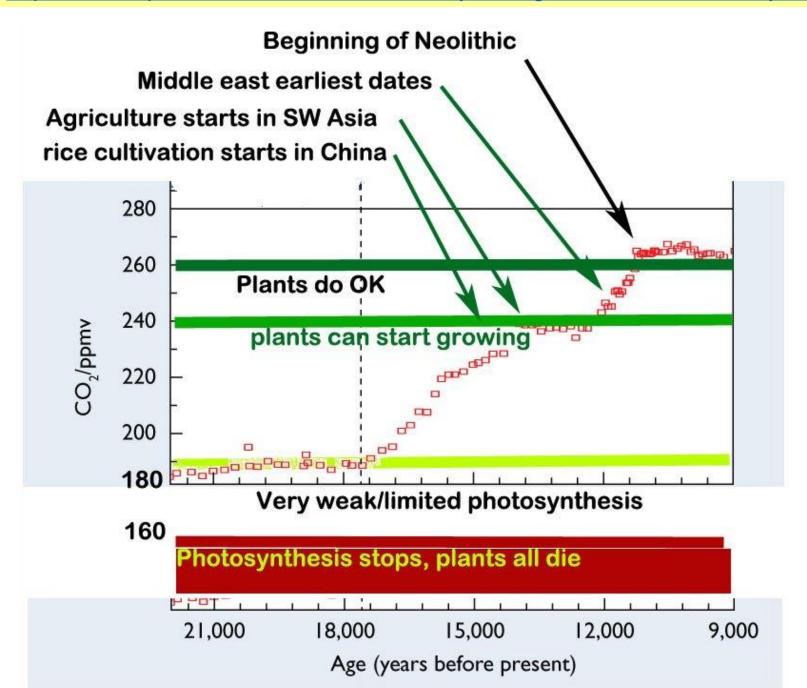
Joy K. Ward*^{†‡}, John M. Harris[§], Thure E. Cerling^{††}, Alex Wiedenhoeft^I, Michael J. Lott[†], Maria-Denise Dearing[†], Joan B. Coltrain**, and James R. Ehleringer[†]

*Department of Ecology and Evolutionary Biology, University of Kansas, 1200 Sunnyside Avenue, Lawrence, KS 66045; *Department of Biology, University of Utah, 257 South 1400 East, Salt Lake City, UT 84112-0840; *The George C. Page Museum of La Brea Discoveries, 5801 Wilshire Boulevard, Los Angeles, CA 90036; *Department of Geology and Geophysics, University of Utah, 135 South 1460 East, Salt Lake City, UT 84112; Forest Products Laboratory, U.S. Department of Agriculture Forest Service, One Gifford Pinchot Drive, Madison, WI 53726-2398; and **Department of Anthropology, University of Utah, 270 South 1400 East, Salt Lake City, UT 84112

... Rancho La Brea tar pit fossil collection includes *Juniperus (C3)* wood specimens that 14C date between 7.7 and 55 thousand years(kyr) B.P., providing a constrained record of plant response for southern California during the last glacial period...

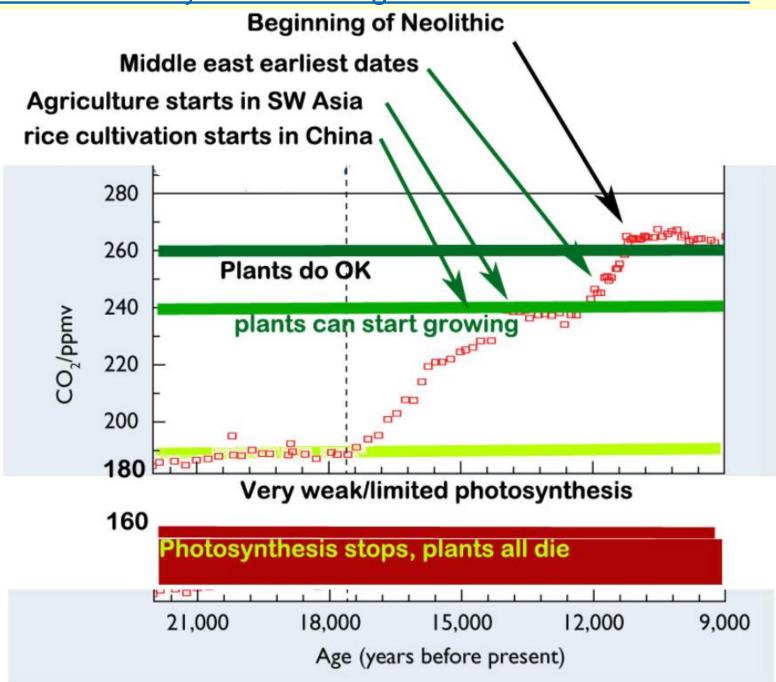
... Atmospheric CO2 concentration ranged between 180 and 220 PPM during glacial periods, rose to 280 PPM before the industrial period, and is currently approaching 380 PPM in the modern atmosphere...

... tree specimens... indicate.. that glacial trees were undergoing carbon starvation.



http://www.mochaexpress.com/Commentary/Elucidate/AgricultureBecamePossible/

"The Greenland Ice Chart for 9,000 to 21,000 years before present shows why agriculture arose: (as presented on WUWT by Andy May)"







Rapid report

Glacial trees from the La Brea tar pits show physiological constraints of low CO₂

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Received: 3 November 2011 Accepted: 24 November 2011

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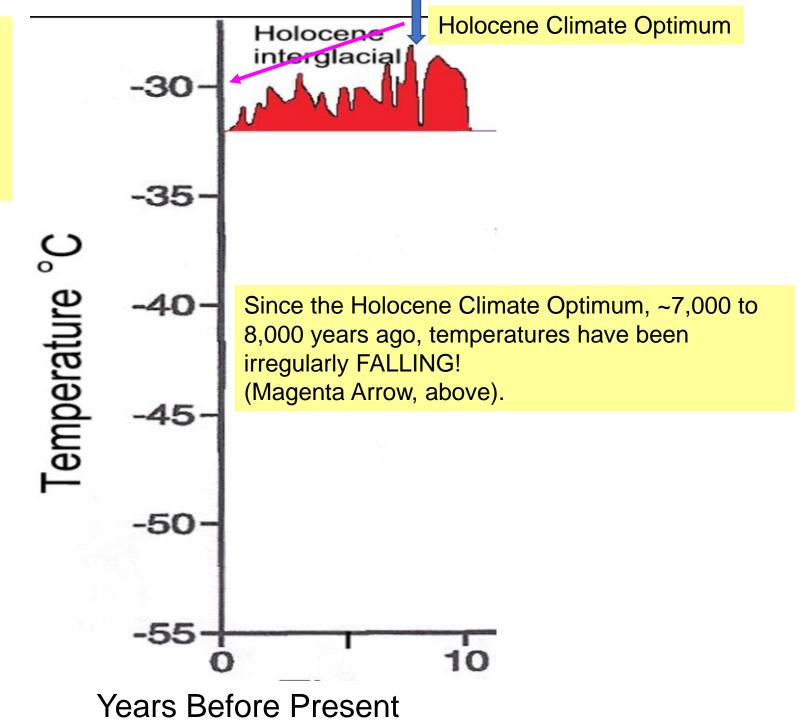
Los Angeles, CA 90036, USA; ³Division of Biology, Kansas State University, 116 Ackert Hall, Manhattan, KS 66506, USA;

¹Department of Ecology and Evolutionary Biology, University of Kansas, 1200 Sunnyside Avenue, Lawrence, KS 66045, USA;

²George C. Page Museum at the La Brea Tar Pits, Natural History Museum of Los Angeles County, 5801 Wilshire Blvd,

⁴Department of Biological Science, California State University, 800 N. State College, Fullerton, CA 92834, USA

Temperature Time Series from the GISP2 Ice Cores from Greenland, shown in https://wattsupwiththat.com/2011/01/24/e https://wattsupwiththat.com/2011/01/24/e https://wattsupwiththat.com/2011/01/24/e https://wattsupwiththat.com/2011/01/24/e asterbrook-on-the-magnitude-of-greenland-gisp2-ice-core-data/



A 5,000-year old Spruce in the Canadian Arctic. This tree grew during the Holocene Climatic Optimum. Trees no longer live there because the climate is colder now. This is now tundra.

Holocene landscape development and climatic change in the low arctic, Northwest Territories, Canada

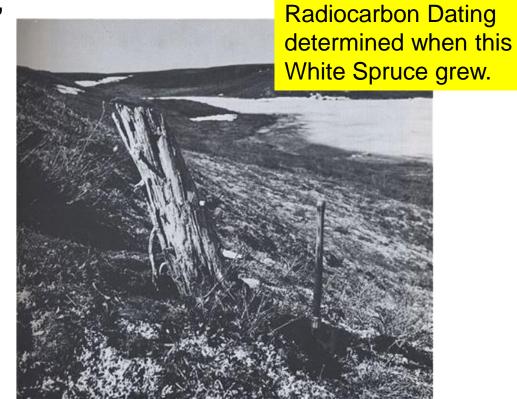
Palaeogeography, Palaeoclimatology,
Palaeoecology

Volume 205, Issues 3-4, 30 March 2004, Pages 221-234

Professor Glen M. McDonald,
Director UCLA Institute for the Environment,
Full Professor, UCLA Dep't of Geography.
Chairman, Department of
Geography, UCLA

Similar Photo also in
"A Primer on CO2 and Climate,"
Howard C Hayden,
Vales Lake Publishing,
Pueblo, CO, pg 18.

Photo is in Dr Hubert Lamb's book, Climate, History, and the Modern World



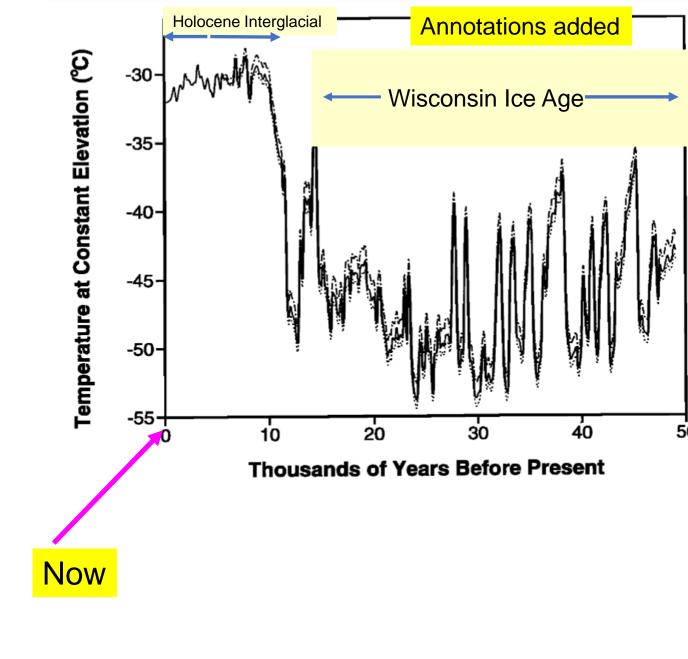
Temperature history from Greenland Ice Sheet using the GISP2 Ice Core.

Important Considerations:

Humans survived the numerous violent temperature fluctuations of 15C magnitude during the Wisconsin Ice Age, without benefit of hot and cold running water, fossil-fueled transport, electrical appliances, and insulated shelter, all available today.

Natural climate changes during the Wisconsin Ice Age appear to be ten times as strong during the Wisconsin Ice Age than during today's Holocene Interglacial.

Claims that today's modest changes in temperatures, going on 2C, will result in "Existential Threats" to humanity are false. In the Holocene Climate Optimum, it was 3C warmer than today. Humanity survived, thrived.



Cuffey, K.M. and Clow, G.D. (1997) Temperature, Accumulation and Ice Sheet Elevation in Central GREENLAND through the Last Deglacial Transition. Journal of Geophysical Research, 102, 26383-26396. https://doi.org/10.1029/96JC03981

TIME DOMAIN: Last 11,000 years

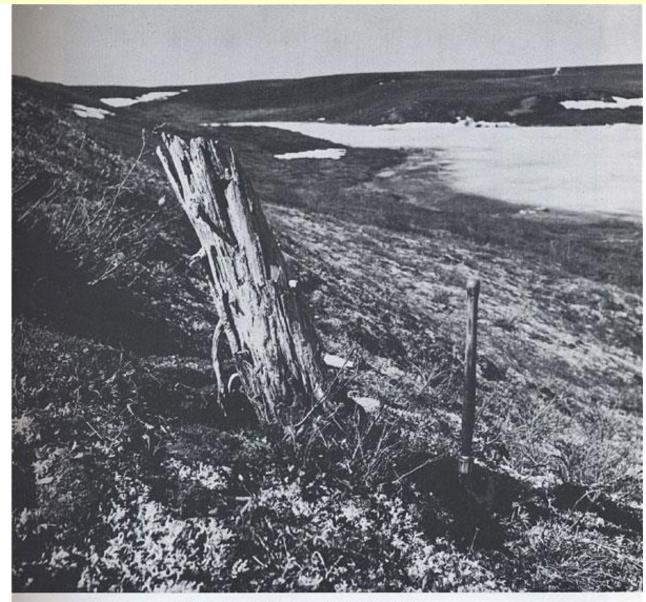


PLATE IV Tree stump (Picea glauca) in the north Canadian tundra.

The stump, radiocarbon dated about 4940 years (±140) B.P., is seen still standing on a steep bank on the Tuktoyaktuk Peninsula (69°7'N 133°16'W) which borders the Arctic Ocean (Beaufort Sea) east of the delta of the Mackenzie River in extreme northwest Canada. This tree in what is now tundra shows wider growth rings than the nearest present-day spruce forest 80–100 km farther south,

Tree Stump (*Picea glauca*) in the north Canadian tundra.

The stump, radiocarbon dated about 4940 (+/- 140) years BP is seen still standing on a steep bank on the Tuktoyaktuk Peninsula (69.7N 133.16W) which borders the Arctic Ocean (Beaufort Sea) east of the McKenzie Delta in extreme northwest Canada. This tree, in what is now tundra, shows wider growth rings than the nearest present-day spruce forest 80-100 km further south near Inuvik in the lowest part of the McKenzie River valley.

Photograph kindly supplied by Professor J. C, Ritchie of Scarborough College, Toronto University



Area around Tuktoyaktuk today: http://www.tuktoyaktuk.ca/index.php/visiting/getting-here
Tundra. Too cold for trees.



http://www.climate4you.com/images/GISP2%20TemperatureSince10700%20BP%20with%20CO2%20from%20EPICA %20DomeC.gif

Paleoclimate chart from
Ole Humlum, University of
Oslo, Geosciences Dept.
showing that it was 2.5C-3C
warmer than today several times
in the recent past.

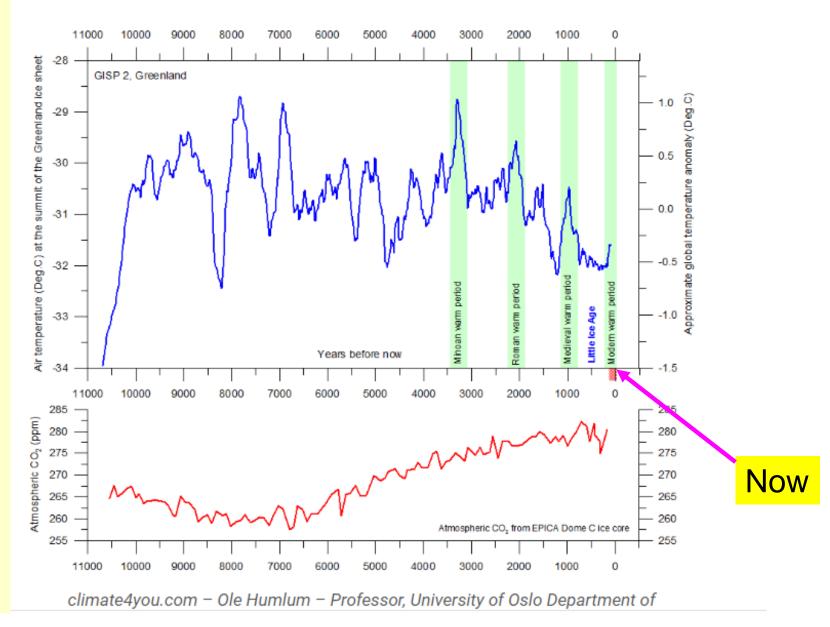
None of these temperature changes were caused by humans or human use of fossil fuels.

Humans survived and thrived in these warmer temperatures.

We are the proof!

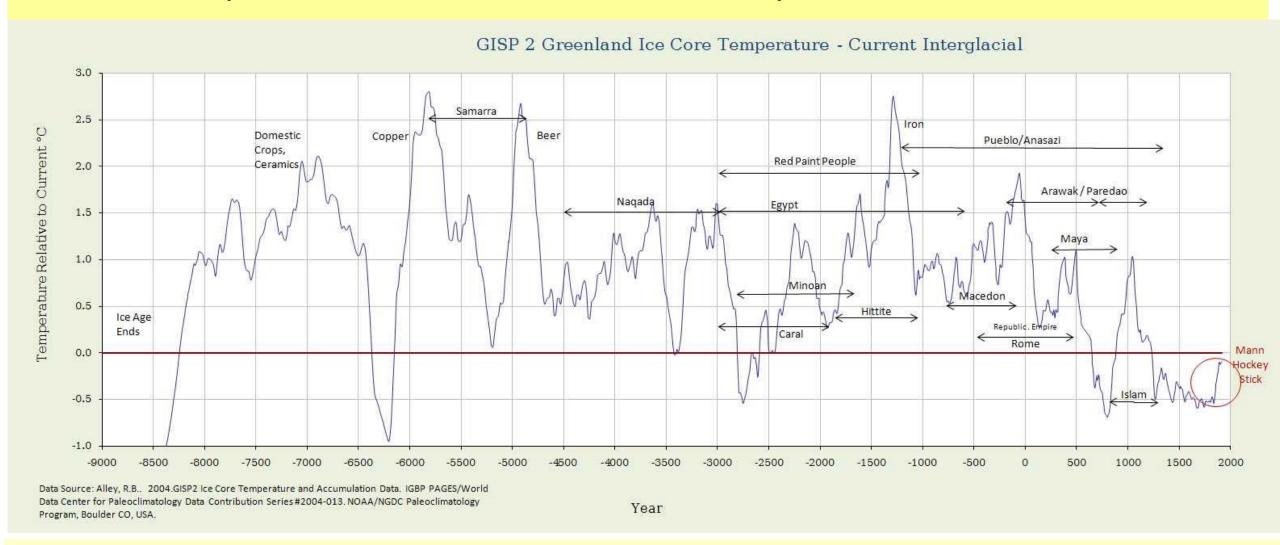
We are here!





https://wattsupwiththat.files.wordpress.com/2011/07/alley-2004.jpg

Temperature Time Series showing that most of the past 10,000 years were warmer than at present; more warming is no threat, certainly not the "Existential Threat" of which alarmists decry.

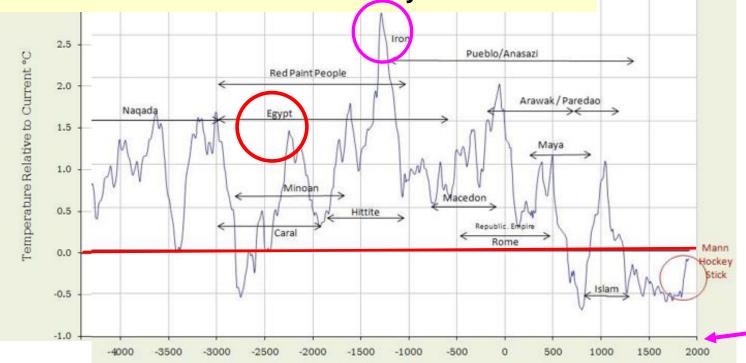


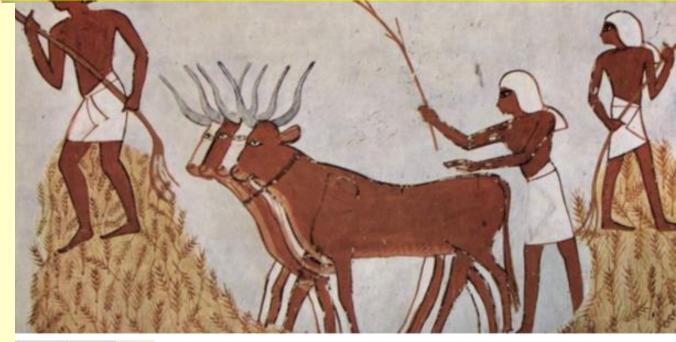
Since 13,000 years ago, warmer temperatures and more CO2 in the air enabled agriculture, more food for humans and farm animals, development of language, culture, art, architecture, cities, medicine, in short, *civilization*.

Art through the ages provides a window into the time the artwork was created.

The image of Egyptian men at work in the harvest shows them wearing breechcloths, nothing else, an indication that it was a lot warmer than today in Biblical Egypt.

The timeline below from the GISP2 ice core in Greenland shows truth of this analysis. Biblical Egypt's zenith period is shown with the Red circle, while Iron Age temperatures at the time in the Magenta circle are more than 3C warmer than today.





Existence of the civilization in ancient Egypt when temperatures were more than 3C warmer than today shows that an increase of 3C again would NOT be an existential threat to humanity.



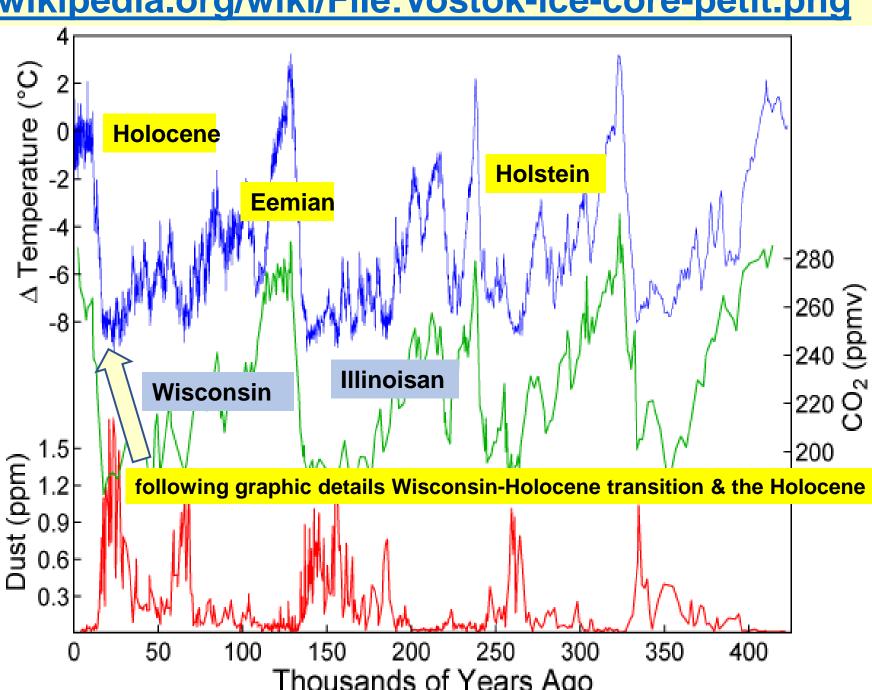
http://en.wikipedia.org/wiki/File:Vostok-ice-core-petit.png

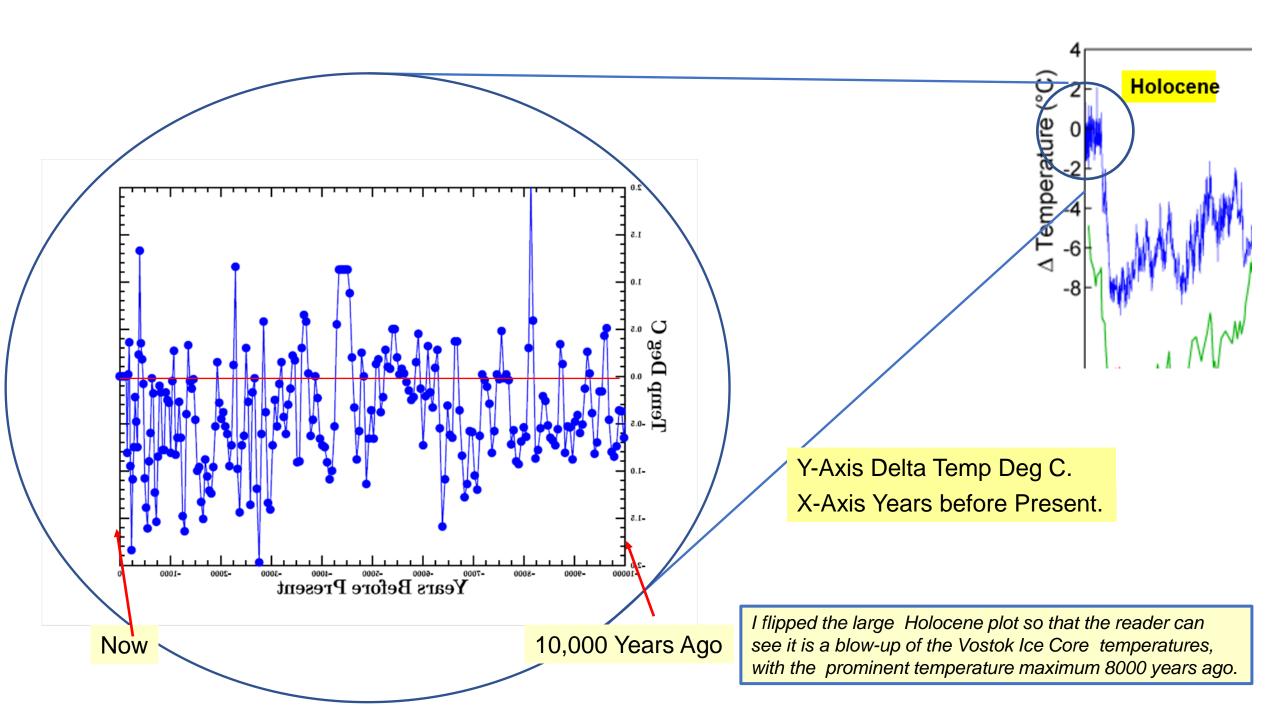
Present <CO2> is ~417 PPM

If CO2 controlled temperature, this would by far be the warmest Interglacial of the five interglacials shown.

But it is by far the coldest of the five interglacials.

Just looking at the chart shows that CO2 does not control temperature.



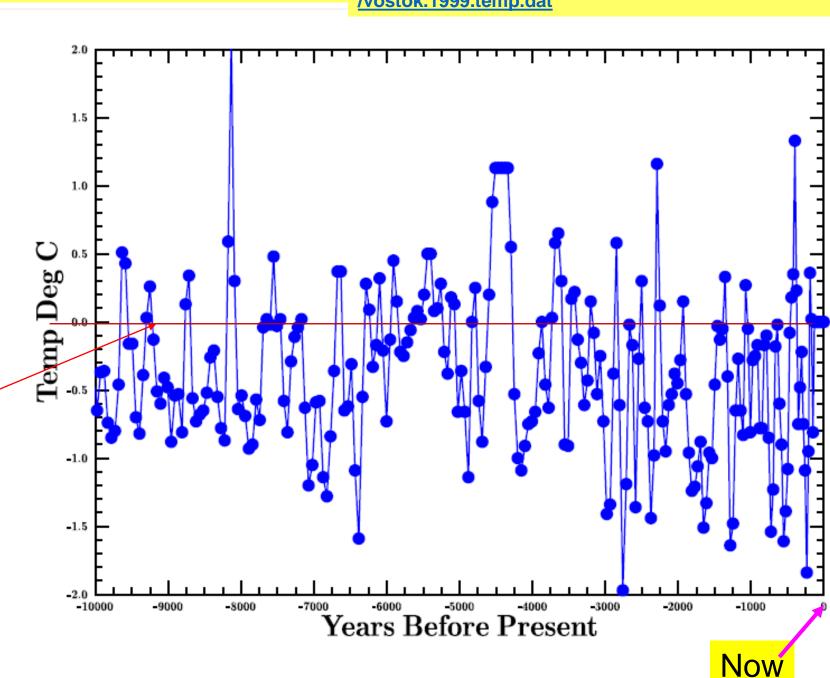


These are the temperatures from the Vostok Ice Cores, showing the last 10,000 years.

It is difficult to see the justification for declarations of "climate crisis," "climate emergency," and cries of "existential threat."

In fact, there is no threat from human-caused CO2-fueled global warming.

Present temperature is plotted as 0.0C, the temperature base line.



Holocene temperatures from Ice Cores, the last 10,000 years.

Top graphic is from Greenland, GISP2 ice core, in Red

Bottom graphic is from Antarctica, Vostok ice core, in Blue

Red horizontal in GISP2 line is ice temp of -30.50C

Both plots show a +/- 2C deviation from the red line.

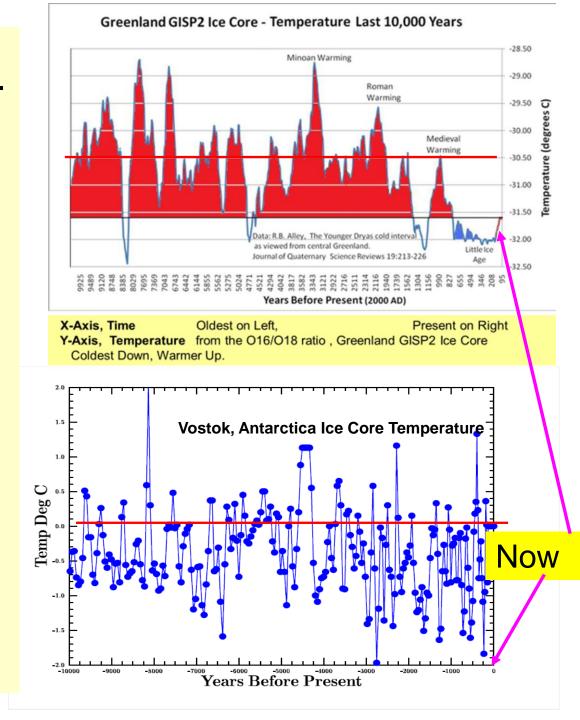
Red Horizontal line in Vostok Core, present temperature.

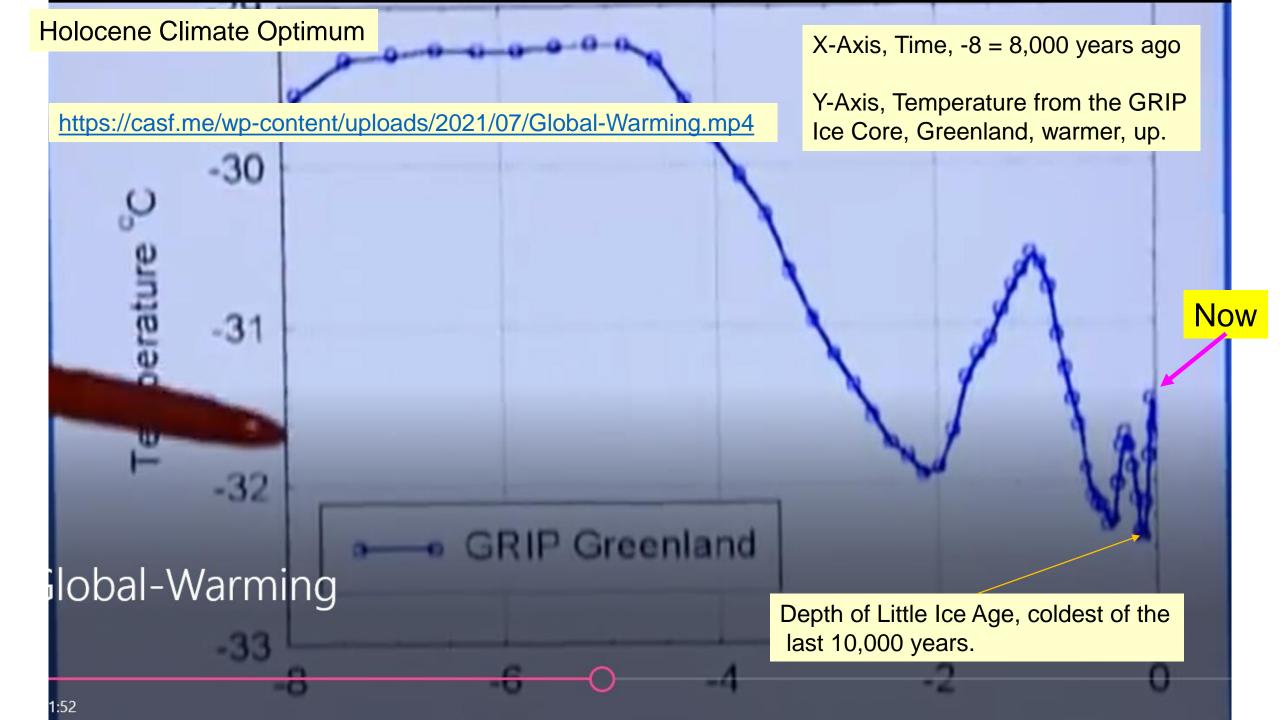
Both plots show that a 1.5C rise from the Little Ice Age minimum is nothing to be concerned about, rather celebrated.

Data show improvements as we warm from the Little Ice Age.

"The Human Condition is improving. Rapidly."

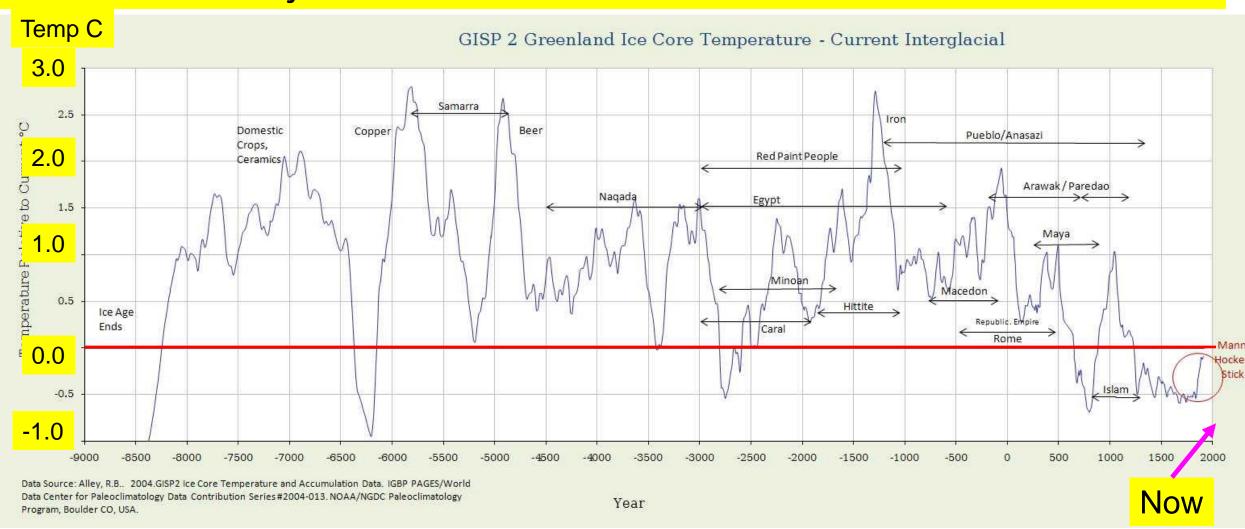
The red line axes in each plot were chosen to show a center line and a line of departure for the +/-2C temperature variations which have occurred over the past 10,000 years, one from the ice cores of each hemisphere.





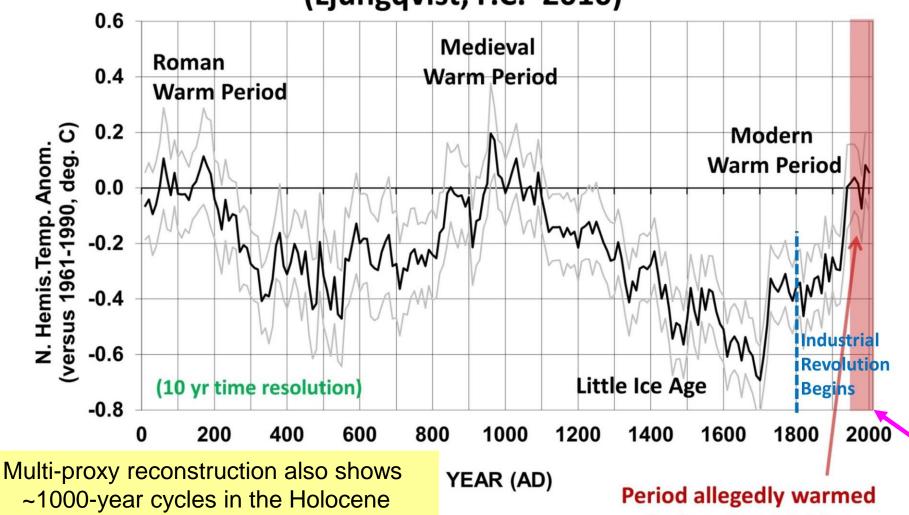
https://wattsupwiththat.files.wordpress.com/2011/07/alley-2004.jpg

Times in the recent past, temperature trace above the red line, show times in the past that were hotter than today.



If you understand this chart, you will see the ignorance of the climate Alarmists' cries of "Existential Threat"





Now

by human activities

History reflects these data. About 550 AD was the "Dark Ages" -- crops failed; babies died. The Medieval Warm Period, ~1000 AD, was the great cathedral building in Europe; the faithful gave thanks for the abundance by building cathedrals.

Concluding Remarks

CONCLUSIONS 1:

The present warming is part of a series of warming and cooling cycles Earth has always experienced.

Humans and our Human Ancestors survived and thrived in the previous interglacials, many of which were considerably warmer than the present warm period, the Holocene.

The present warm period is nowhere as warm as it was in the Holocene Climate Optimum 5000-8000 years ago.

The present warm period is an extension of the warming out from the depth of the Little Ice Age about 1690 AD. There was a jump in temperatures after 1690 which could not have been human-caused. The present warming is halting, gentle and benign.

The Human Condition is improving. Rapidly.

There is not the slightest element from The Data which would even hint that there is an "Existential Threat" from the present warming.

I can only conclude that the cries of "Climate Crisis," "Climate Emergency," and "Existential Threat" are modern versions of Henny Penny crying "The Sky is Falling!"

The sky is not falling. The data show that the present warmth is neither catastrophic nor unusual.

CONCLUSIONS 2:

The UN, President Biden, Secretary Austin and others proclaim that a continuation of the present slow and uneven warming, to 2C above the pre-industrial cold of the Little Ice Age, will result in an "EXISTENTIAL THREAT" to the USA and all humanity.

Quite frankly, they make these claims without consideration of the knowledge of climate history and human history that are available to anyone with the ability to use Internet Search, the curiosity to examine what has happened in the past, and think critically.

Examination of the proxy temperature histories from the Greenland and Antarctic Ice Cores reveals hundreds of thousands of years of data, each year determined by counting the dust which forms over the ice each warm season.

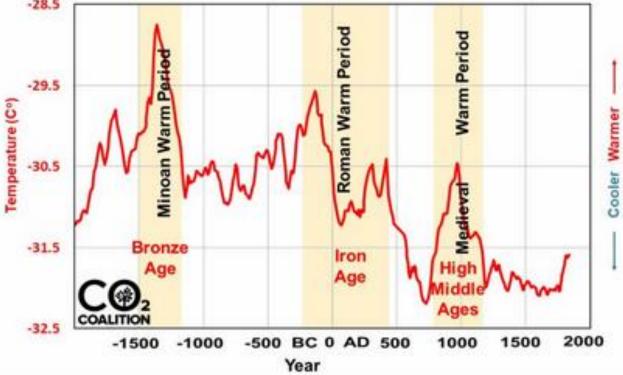
Temperatures were 2.5C to 3C warmer than today several times, during the height of the ancient city of Samarra, during the height of the Minoan Civilization, and the times of Biblical Egypt. Artwork from the time, the frontispiece of this topic, shows Egyptian men working with only a breechcloth, an indication of the warmth during that time.

The previous interglacial, the Eemian, 130,000 years ago, was 4C warmer than at present, so warm that fossils of hippos are found in the valleys of the Rhine and the Thames.

Clearly the ancients survived those times; **we are their descendants**, **here today**. Those warning of an EXISTENTIAL THREAT from today's puny rate of warming have no skill in looking up past climate, or in critical thought.



Climate & Human History Part 3
Minoan Warm Period



Climate & Human History Pt 3 Minoan Warm Period CO2 Coalition

https://myemail.constantcontact.com/Part-3---Climate-and-Human-History.html?soid=1101509381788&aid=jlHnnQ8u7Gw

We are being told that continued warming will lead to catastrophic events. Human history tells quite a different story. In the previous much warmer periods, humanity flourished.

The rise of the first great civilizations occurred during a period known as the Bronze Age. Great empires arose and life flourished around the Mediterranean (Mycenaean), in Egypt (Old Kingdom), China (Xia dynasty), Mesopotamia (Hittite, Syrian & Babylonian) and in the Indus Valley of India (Harrapan). In this period, humanity saw early advancements such as the inventions of the wheel, writing, bronze smelting, and wine making.

Climate & Human History Part 3 Minoan Warm Period CO2 Coalition

https://myemail.constantcontact.com/Part-3---Climate-and-Human-History.html?soid=1101509381788&aid=jlHnnQ8u7Gw

Minoan Era temperatures are mainly known from ice cores and other proxies. We know that the crop millet was grown in southern Scandinavia and the Tibetan Plateau -- areas far from the tropical and subtropical regions that are home to the grain now. Comparing today's average annual temperature in Denmark to that required to grow millet indicates that the temperature was at least 2 degrees Celsius (3.6°F) warmer during the Minoan period than today.

Despite temperatures much higher than the most-likely rise predicted for the 21st century by the IPCC, there was no tipping point or cascade of climate catastrophes. Rather, Earth and humanity thrived.

http://www.sepp.org/twtwfiles/2023/TWTW%2001-14-23.pdf

"Scales of Time: Writing in Spectator, Australia, geophysicist Ian Plimer writes

"On a scale of tens of millions of years or more, the Earth's climate is driven by plate tectonics."

"On a scale of hundreds of thousands of years, the Earth's climate is driven by orbital cycles which bring Earth closer to or more distant from the Sun."

"On a scale of thousands of years to decades, the Earth's climate is driven by variations in energy emitted from the Sun."

"If governments, the UN or climate activists want to stop the normal planetary process of climate change, then they need to stop plate tectonics, stop variations in the Earth's orbit and stop variations in solar output."

After discussing the impact of the last period of glaciation which reached its maximum 18,000 to 20,000 years ago, Plimer concludes:

"We are putting all our efforts and wasting trillions of taxpayers' dollars into trying to prevent mythical human-induced global warming, yet we still don't prepare for the inevitable annual floods, droughts, and bushfires, let alone longer-term solar – and orbitally – driven global cooling."

"We have a crisis of single-minded stupidity exacerbated by a dumbed-down education system supported by incessant propaganda, driven by financial interests and political activist authoritarianism."

STOP Continental Drift

