CLIMATE CHANGE
IN PERSPECTIVE

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CLIMATE CHANGE IN PERSPECTIVE

- We’re going to use a data-based approach to challenge some of the “accepted notions” of climate change.
  - You’ll notice a common theme – advocates for climate change present only selected data to support their conclusions. We’re going to look at all the data.

- We’re going to examine some of the predictions that have been made by some scientists and the press about the fate of the earth and mankind if we don’t address “climate change”.

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CLIMATE CHANGE IN PERSPECTIVE
Accepted notions about climate change

Modern societies dependence on fossil fuels is causing:

- More greenhouse gases (CO2) affecting the atmosphere
- An overall warming of the earth
- An increasing number and intensity of heat waves
- … Leading to more forest fires
- The melting of glaciers and ice caps
- … Causing rising water levels in the oceans
- More violent storms and severe weather events
CO2 concentration and temperature and are well correlated.

Temperature and CO2 concentration in the atmosphere over the past 400,000 years (from the Vostok ice core)

Year before present (present = 1950)

Temperature change from present, °C

Year before present (present = 1950)


400,000 years Carbon Dioxide levels vs. Temperature
However, temperature increases come before increases in CO2 concentration.

18,000 years Carbon Dioxide levels vs. temperature (my notations)
The ocean has the vast majority of the CO2 on the planet.

When the bulk of the ocean warms, CO2 and other dissolved gases are expelled.

With ocean currents being roughly as they are now (the Atlantic Conveyor) it takes 800 years or more for the bulk of the ocean to warm up after the surface does.

Therefore, the data don’t support the notion that CO2 causes an increase in temperature.

Rather, increases in temperature cause increases in CO2 approximately 800 years later.
Understanding the Earth’s Thermostat

There’s a limit to the magnitude of the effect CO2 concentration can have on the atmosphere.

CO2 only absorbs infrared (heat) in two narrow wavelengths.

The current concentration of CO2 already absorbs over 90% of the infrared in those wavelengths.

If you double or triple CO2 concentrations, absorption will increase only by 10%, i.e., from 90% to 100%.

Absorption spectra of air constituents

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Advocates of CO2-driven warming respond to this argument as follows:

Chain reaction “tip-over” point → drastic warming

However ...

Understanding the Earth’s Thermostat

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However, there is a negative feedback on this process.

Water vapor is the source of cloud formation.

CO₂ → Slight Warming

Clouds cause cooling
Which effect wins?

Water vapor as a greenhouse gas → Drastic warming

vs.

Water vapor forming clouds → Cooling the atmosphere

Neither wins.

The two mechanisms are the “earth’s thermostat”

As we’ll see in the next few slides, in its history, the Earth has warmed to temperatures much higher than they are today, and has naturally recovered time and time again.
CLIMATE CHANGE IN PERSPECTIVE
Accepted notions about climate change

Modern societies dependence on fossil fuels is causing:

- More greenhouse gases (CO2) affecting the atmosphere
- An overall warming of the earth

Let’s look at temperature patterns in greater depth.
Accepted notion:
More greenhouse gases (CO2) $\rightarrow$ Global warming

Historical temperature record starting with the modern period and working back.
Accepted notion:
More greenhouse gases (CO2) → Global warming

Climate change advocates show changes in the modern period (1880 to 2000) in support of global warming.
Accepted notion:
More greenhouse gases (CO2) $\rightarrow$ Global warming

Data you don’t usually see: Medieval to Modern (400 BC to 2000)

Ice Ages and Astronomical Causes, Muller & MacDonald (Springer-Praxis, 2000)

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Accepted notion:
More greenhouse gases (CO2) → Global warming

Data you don’t usually see: Time of Ice Ages to Modern (400,000 BC to 2000)

Repeated periods of warming and cooling.

Ice Ages and Astronomical Causes, Muller & MacDonald (Springer-Praxis, 2000)

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Accepted notion:
More greenhouse gases (CO2) → Global warming

Data you don’t usually see: Back to the Pleistocene Era (3,000,000 years)

The earth is actually cooling off.

Ice Ages and Astronomical Causes,
Muller & MacDonald (Springer-Praxis, 2000)
mirror image of original

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Dependence on fossil fuels is causing more greenhouse gases (CO2) affecting the atmosphere and leading to global warming.

Throughout history, the earth has warmed and cooled periodically.

Increases in temperature come before increases in CO2 concentration.
Accepted notion: There is an increasing number of heat waves.
If you go back further in time, there are fewer heat waves now than in the 1930s.

Figure 1. U.S. Annual Heat Wave Index, 1895–2015

This figure shows the annual values of the U.S. Heat Wave Index from 1895 to 2015. These data cover the contiguous 48 states. Interpretation: An index value of 0.2 (for example) could mean that 20 percent of the country experienced one heat wave, 10 percent of the country experienced two heat waves, or some other combination of frequency and area resulted in this value.

Data source: Kunkel, 2016®
Web update: August 2016
One example of selecting a small slice of data that supports your narrative.

The number of days above 90F since 1955
Best fit straight line → the slope shows an increase
If we look at all the data …

The number of days above 90F since 1890
Best fit straight line → the slope shows a decrease
Dependence on fossil fuels is causing more greenhouse gases (CO2) affecting the atmosphere and leading to global warming.

Throughout history, the earth has warmed and cooled periodically. Increases in temperature come before increases in CO2 concentration.

There is an increasing number of heat waves.

We’re experiencing fewer heat waves now than in the 1930s.
CLIMATE CHANGE IN PERSPECTIVE

Accepted notions:

Glaciers and Icecaps are melting

... Causing the ocean levels to rise
Are glaciers melting?
Slice of satellite data from 1979.
Seems to indicate glaciers are melting.
Are glaciers melting? – Not if you look further back


Figure 7.20: (a) Northern Hemisphere, and (b) Southern Hemisphere sea-ice extent anomalies. Data from NOAA (USA).
Are icecaps are melting? Not if you look at all the circumstances.

As an example:

- Kilimanjaro: the maximum temperature on the mountain ever recorded is -2.4C. Ice doesn’t melt at -2.4C.

- Deforestation of the surrounding terrain started 150 years ago under British rule and continues today under local government. As a result, the air is much drier.

- Dry air flows over the glaciers and turns the ice directly to vapor.

- In other words sublimation.
Dependence on fossil fuels is causing more greenhouse gases (CO2) affecting the atmosphere and leading to global warming.

Throughout history, the earth has warmed and cooled periodically. Increases in temperature come before increases in CO2 concentration.

- There is an increasing number of heat waves.
- We’re experiencing fewer heat waves now than in the 1930s.

- Glaciers and ice caps are melting.
- Satellite data indicate sea ice levels are actually higher than in about 1970. Temperatures remain below freezing. Deforestation and resulting dry air is causing ice caps to sublime.

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Accepted notion: Sea levels are rising more rapidly due to increased use of fossil fuels in recent years

Typically, you see data from about 1920 that supports this point of view.
In fact, sea levels have been increasing pretty steadily at a rate of 2.84 mm/year for the last couple of hundred years.

Were there more fossil fuels burned in Abraham Lincoln’s time than there are today?
Going back further we see that sea levels began increasing after the last glacial maximum about 16-18 thousand years ago. The increase has slowed considerably in the last several thousand years.
### CLIMATE CHANGE IN PERSPECTIVE

**Accepted notion:**

- Dependence on fossil fuels is causing more greenhouse gases (CO2) affecting the atmosphere and leading to global warming.
- There is an increasing number of heat waves.
- Glaciers and ice caps are melting.
- Melting glaciers and ice caps are causing ocean levels to rise.

**The complete data shows:**

- Throughout history, the earth has warmed and cooled periodically. Increases in temperature come before increases in CO2 concentration.
- We’re experiencing fewer heat waves now than in the 1930s.
- Sea ice levels are actually higher than in about 1970. Deforestation and resulting dry air is causing ice caps to sublime.
- There is no evidence that the steady rise in sea levels is related to human activity. The rise pre-dates the industrial revolution and the dramatic increase in world-wide population with the increased use of fossil fuels.

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Accepted notion:
In recent years we’re experiencing a lot more wild fires!

Slice of data from about 1980 seems to indicate this is true.
If we go further back to about 1920 …

There are fewer wild fires now than in the first half of the century!
Accepted notion:
Storms have become more destructive as the Earth warms.

Total losses in 2005 US dollars

Total normalized losses in US dollars

Hurricane damage 1900 - 2000 (Pielke, Natural Hazards Review, 2008, v.6, p.13)
Dependence on fossil fuels is causing more greenhouse gases (CO2) affecting the atmosphere and leading to global warming.

Throughout history, the earth has warmed and cooled periodically. Increases in temperature come before increases in CO2 concentration.

The number of heat waves in increasing.

Fewer heat waves now than in the 1930s.

Glaciers and ice caps are melting.

Sea ice levels are actually higher than in about 1970. Deforestation and resulting dry air is causing ice caps to sublime.

Melting glaciers and ice caps are causing ocean levels to rise.

The rise in sea levels pre-dates the industrial revolution.

In recent years we’re experiencing a lot more wild fires!

There are fewer wild fires now than in the first half of the century!

Storms have become more destructive as the Earth warms.

Normalized in US dollars, the extent of storm damage has not increased.

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Predictions:
Massive flooding, apocalyptic crop failures due to global warming are right around the corner.

1. San Jose Mercury News (CA) - June 30, 1989 - 3F
General News

GRIM FORECAST
A senior environmental official at the United Nations, Noel Brown, says entire nations could be wiped off the face of the earth by rising sea levels if global warming is not reversed by the year 2000. Coastal flooding and crop failures would create an exodus of "eco-refugees," threatening political chaos, said Brown, director of the New York office of the U.N. Environment Program. He said governments have a 10-year window of opportunity to solve the greenhouse effect before it goes beyond human...
Not a lot of evidence that we’re running out of food!
The real reason for pushing the climate change narrative.

“We (UN-IPCC) redistribute de facto the world’s wealth by climate policy…”

“One has to free oneself from the illusion that international climate policy is environmental policy. This has almost nothing to do with environmental policy anymore…”

-Dr. Ottmar Endenhofer, IPCC co-chair of Working Group 3, November 13, 2010 interview [H/t Dr. Charles Battig]
Opinion of Matin Durrani, managing editor of Physics World magazine

“I’m not sure for how long my own optimism will last, and for sure there will be plenty of downs as well as ups over the next 10 years. But as cognitive psychologist Stephen Pinker argued in his 2018 book *Enlightenment Now*, the world is, overall, improving. Whether measured in terms of health, literacy, safety or prosperity, things are only getting better – and those advances are due, in no small part, to science.”
Climate change in the press

Newsweek, April 28, 1975

“The Coming Ice Age” was predicted.

The Cooling World

There are ominous signs that the earth’s weather patterns have begun to change dramatically, and that these changes may result in disastrous effects on food production—with serious political implications for both more developed nations and even entire continents. The drop in food output could bring panic, famines, and even wars from now on. The world is challenged to face up to the great weather-producing forces of nature, and to protect itself as best it can.

The Cooling World

The Coming Ice Age was predicted.

Climate change in the press

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40
1977
“How to survive the coming ice age”

2006
Special report on Global Warming
“Be worried. Be very worried.”

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## CLIMATE CHANGE IN PERSPECTIVE

### Accepted notion:

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### The complete data contradicts!

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We’ve discussed many of the accepted notions of “climate change”, and have found serious flaws in the theory that globe warming exists, and that it’s caused by human activity.

My opinion is that this theory is, at best, misguided. At worst, it’s a scam.

Over 30,000 scientists, including 7000 PhDs, have signed a petition declaring their skepticism.
In spite of the evidence to the contrary, what if it’s true?

We have a choice:

**Prohibit the use of fossil fuels as a means to prevent climate change.**

The costs?
- Trillions of dollars.
- Condemning billions of people to poverty, especially those in underdeveloped and developing countries.
- We would push ourselves back to 1910 living conditions
- If we’re lucky, we might reduce the projected temperature increase of a fraction of a degree.

-- or --

**Look for realistic mitigating solutions, rather than prevention.**