

## Climate Change – At a glance

**6E's**— Empathy > Energy > Ecology > Environment > Epidemics > Economy crises

**Empathy** > Interacting “Mother Earth” as “Matter Earth”

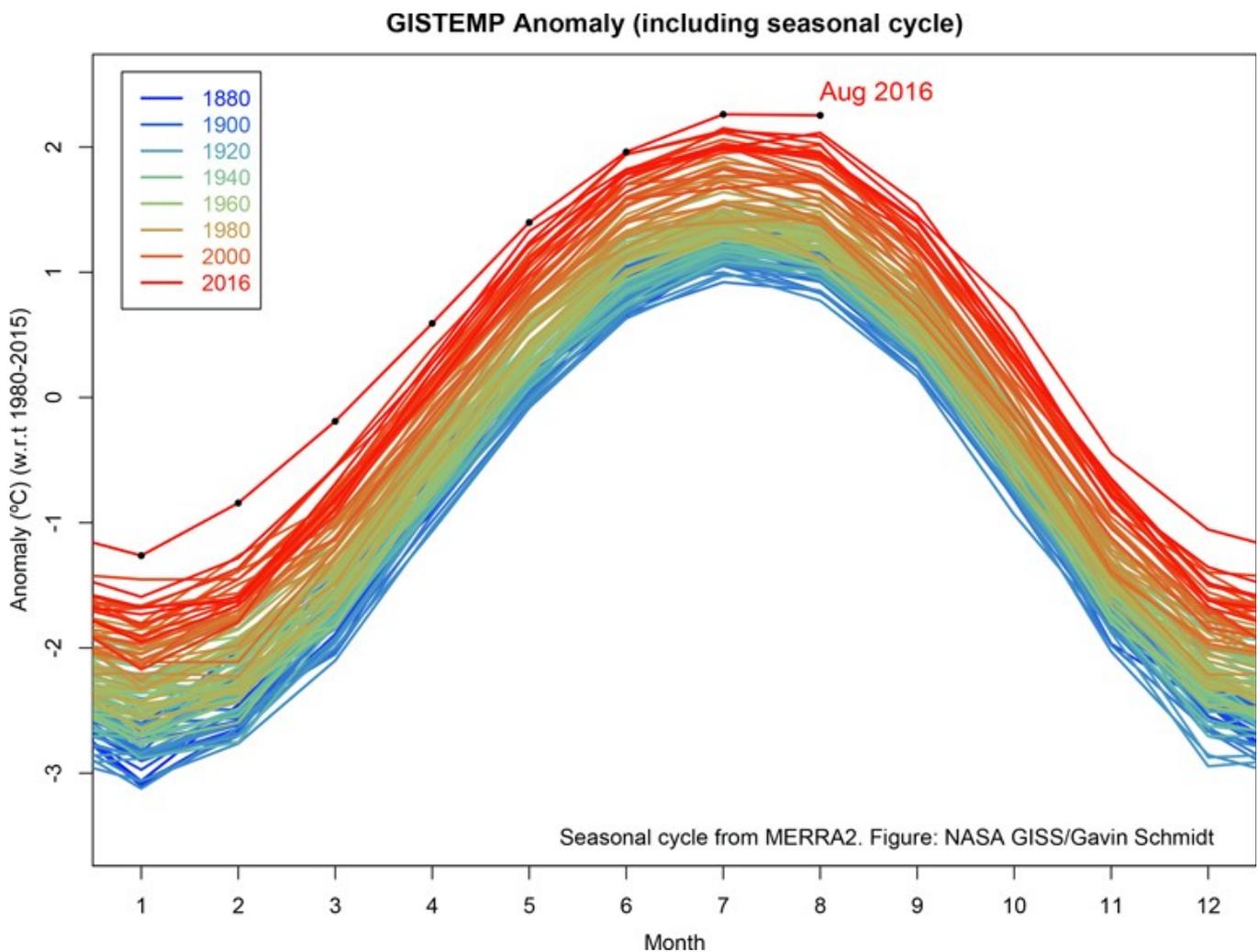
**Energy Imbalance** > Accumulated energy equals at least 400,000 Hiroshima level atom bomb per day (James Hansen, Ex. head of the NASA Goddard Institute, 2012 data)

**Ecology** > Extinction of 150–200 species per day.

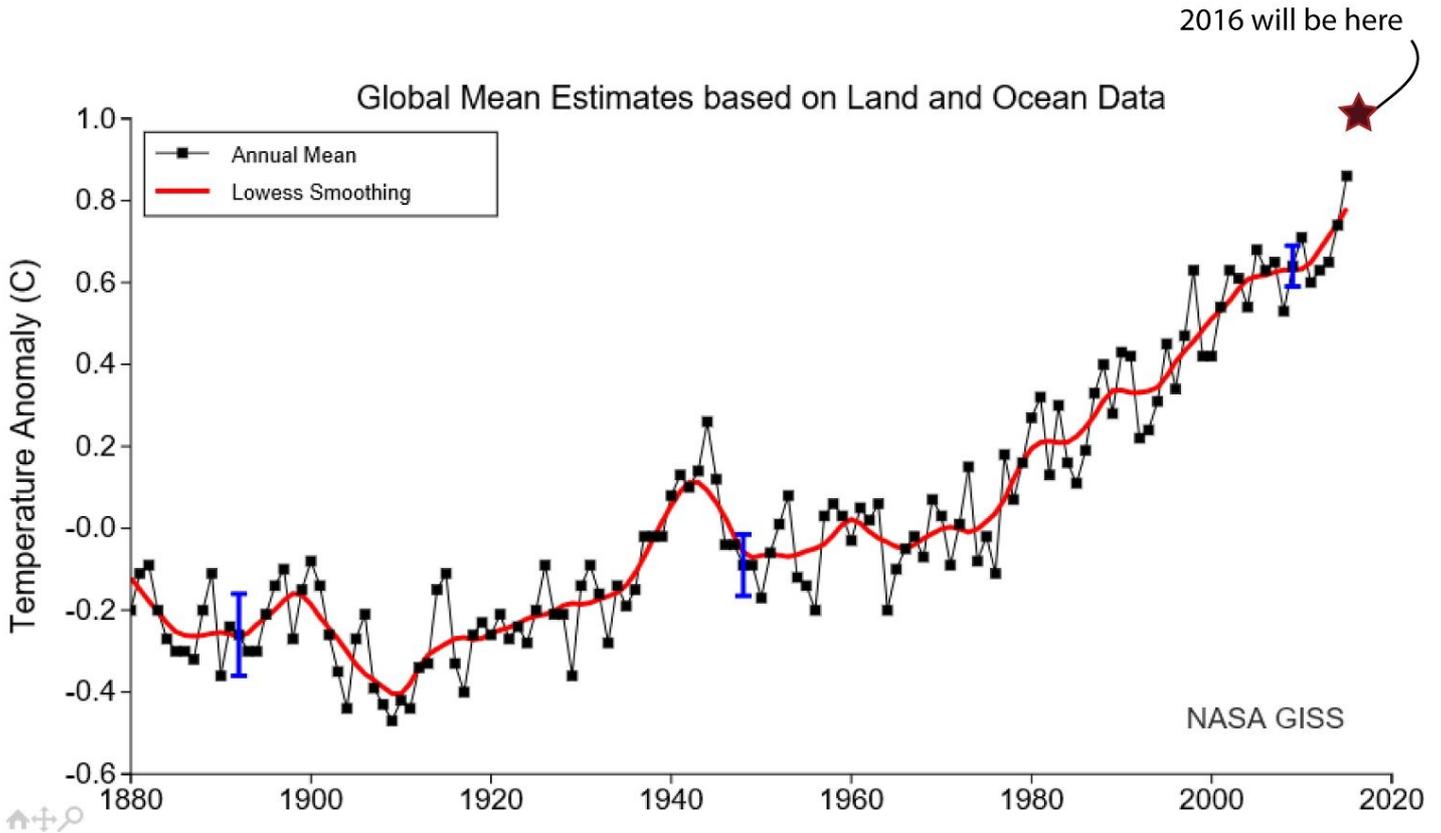
**Environment** > [climate.nasa.gov](http://climate.nasa.gov) CO2 level > 404.07ppm

**Epidemics** > Continuously increasing health problems.

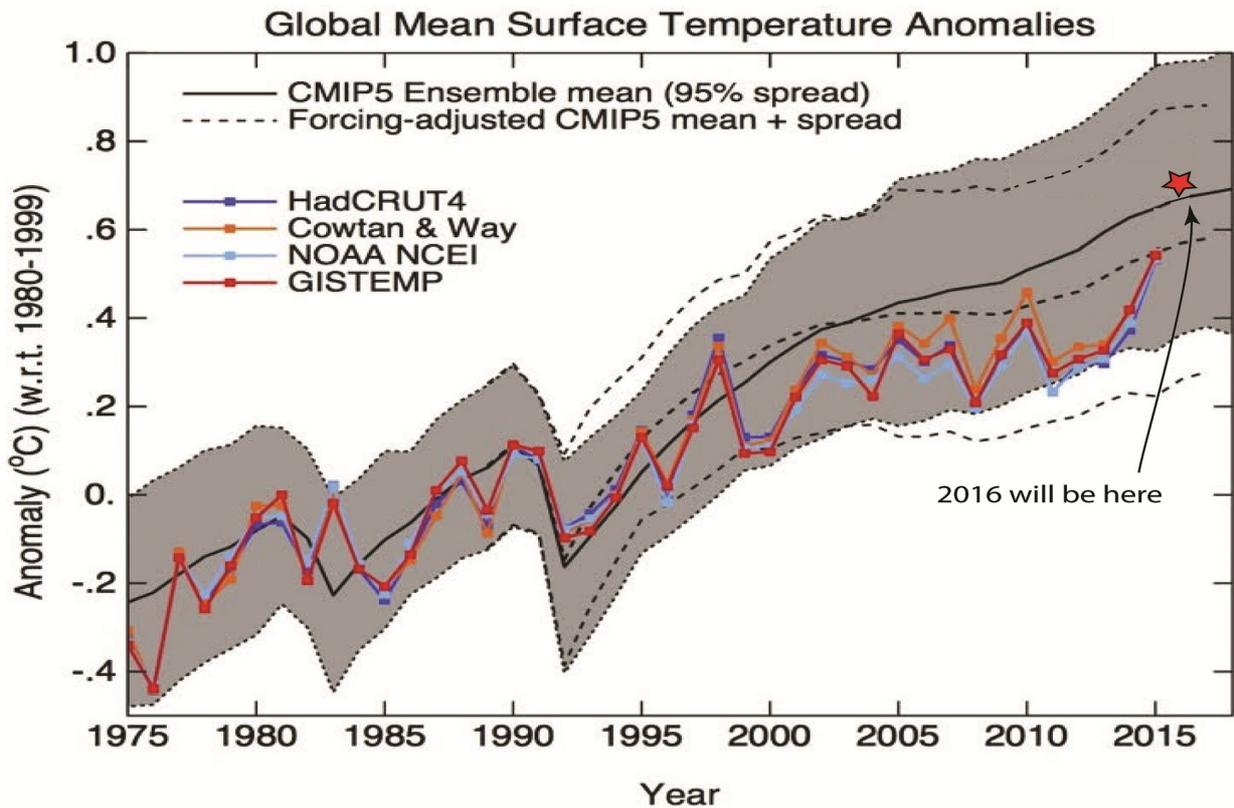
**Economy** > Total global debt is about \$60 trillion in 2016.



# Global warming continues; 2016 will be the hottest year ever recorded

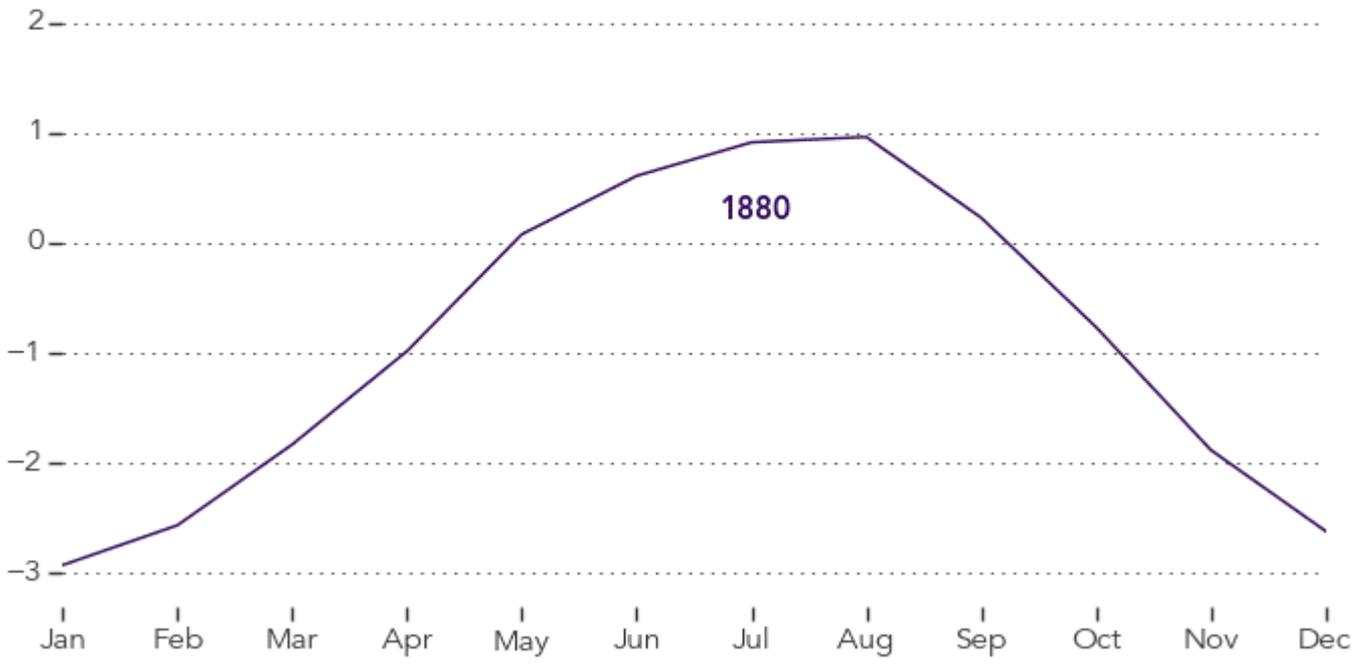


Estimate made on October 6, 2016 (J.P. Abraham)

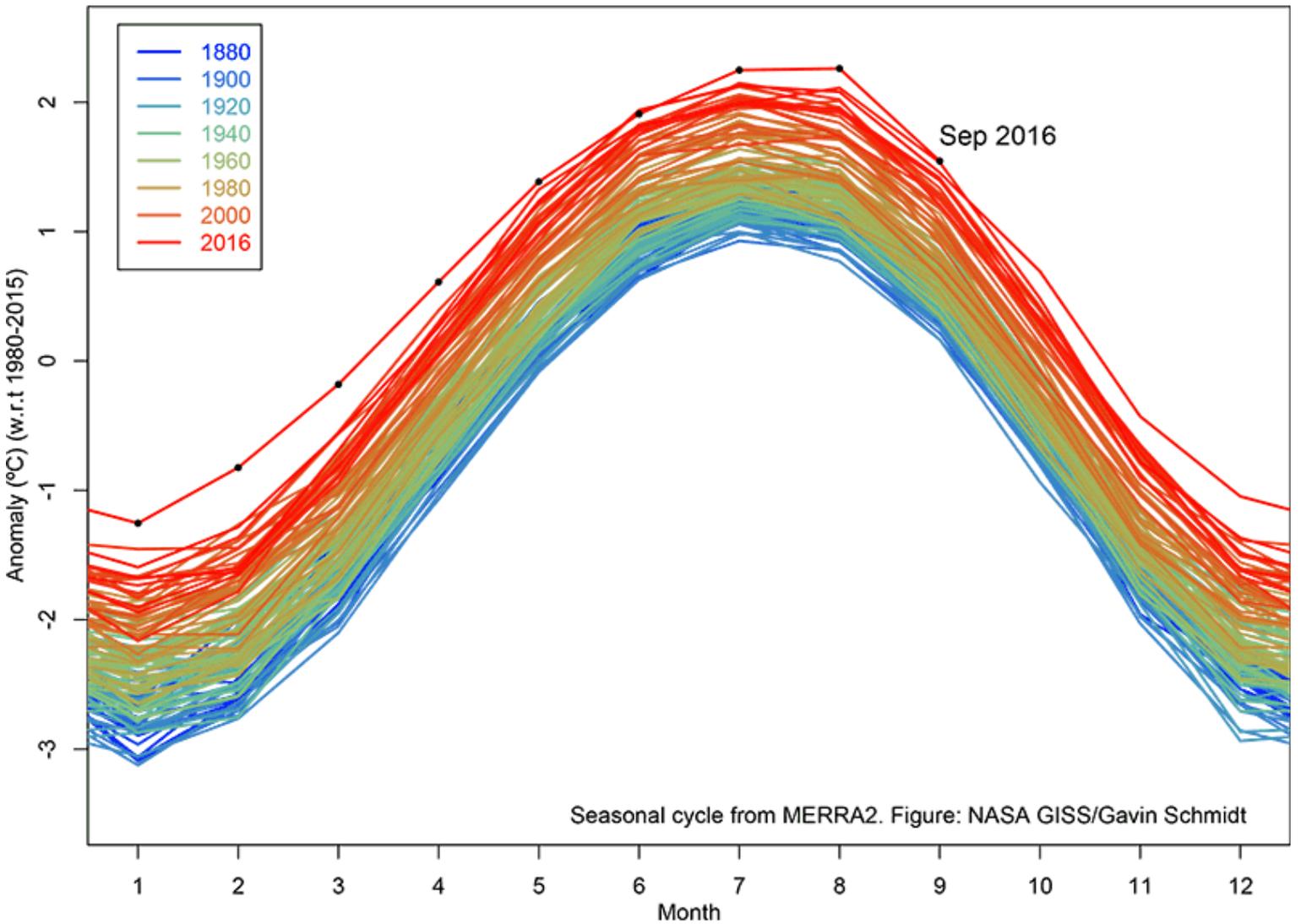


Credits: Graph provided by Dr. Gavin Schmidt  
Modified by J.P. Abraham, October 8, 2016

**Temperature Anomaly (°C)**  
(Difference from 1980-2015 annual mean)

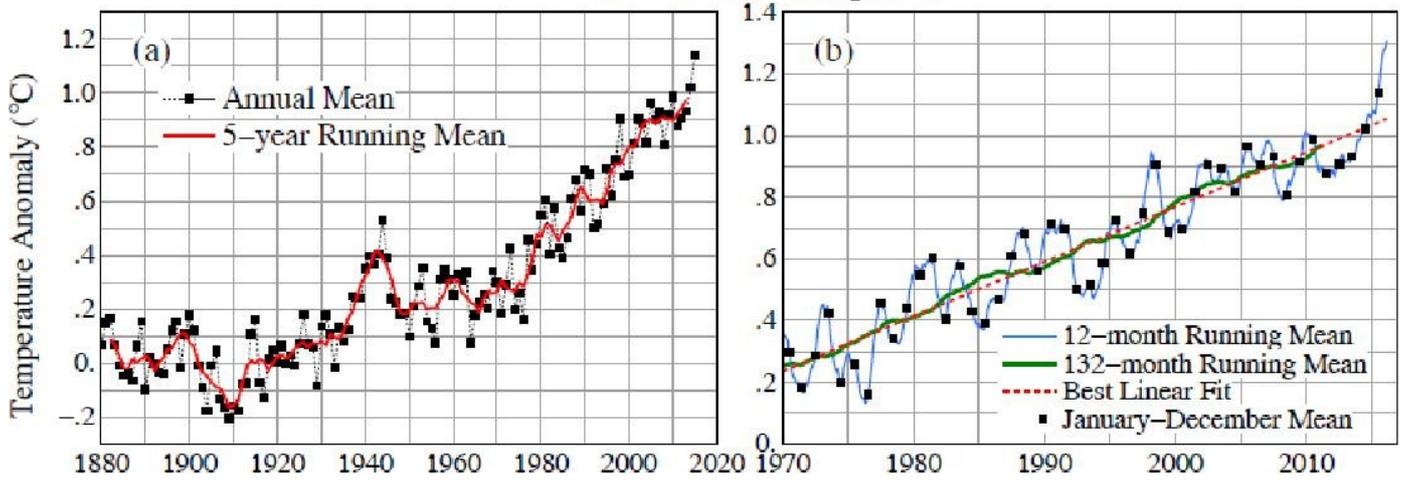


**GISTEMP Anomaly (including seasonal cycle)**



Seasonal cycle from MERRA2. Figure: NASA GISS/Gavin Schmidt

## Global Surface Temperature



[August 2016 was the hottest August on record.](#)

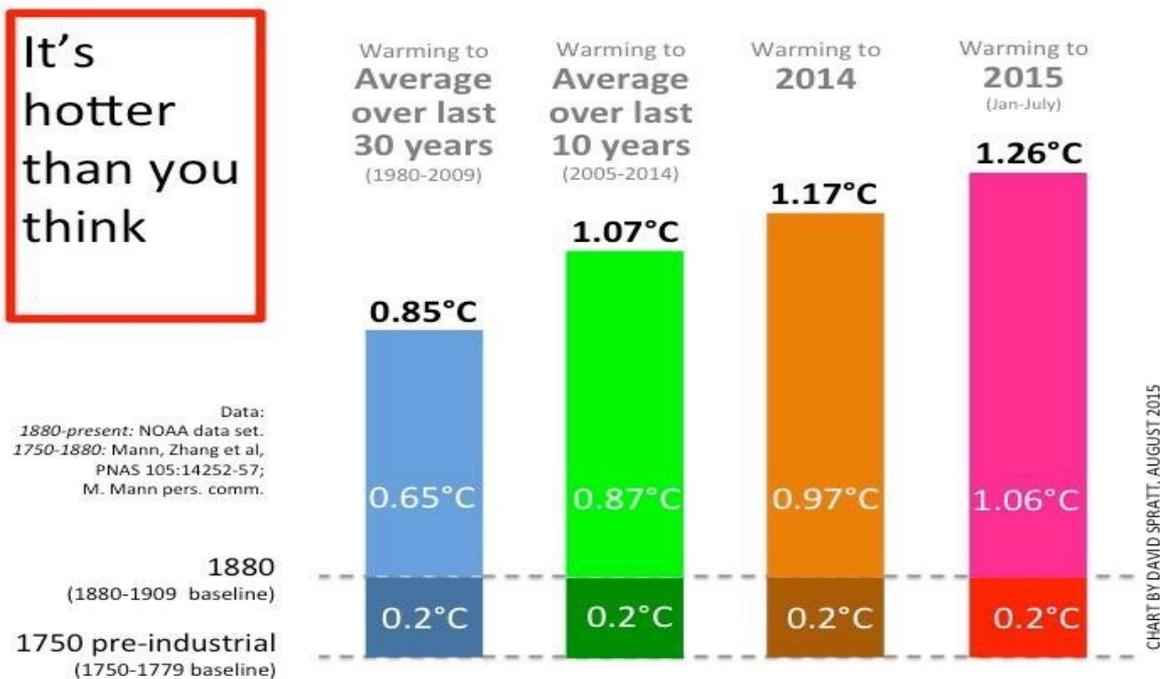
[July 2016 was world's hottest month since records began, says Nasa](#) | Environment | The Guardian

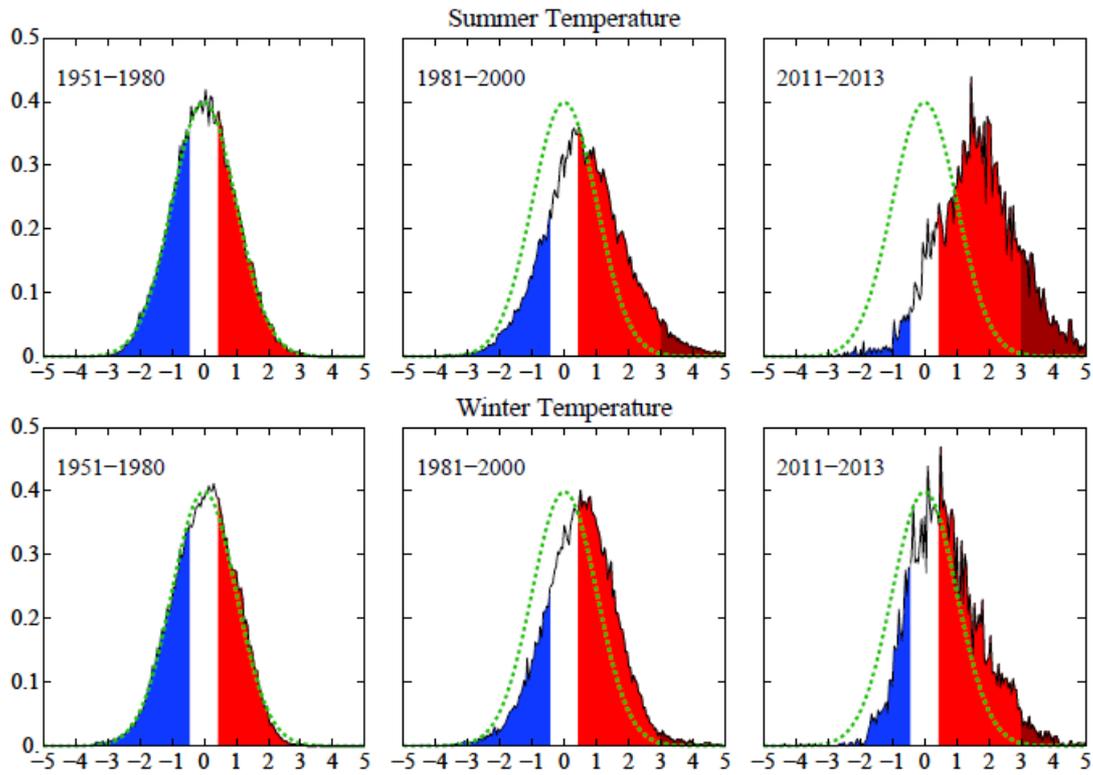
[Antarctic CO2 hits 400ppm for first time in 4m years](#) | Environment | The Guardian

[September 2016 was globally the warmest September in the instrumental record](#), i.e., since 1880. The 12-month running mean is 1.04°C relative to 1951-1980 or 1.31°C relative to 1880-1920. It is apparent that 2016 will break the prior record by a wide margin.

[2016 locked into being hottest year on record Nasa says](#)

[World on track for 3C of warming under current global climate pledges warns UN](#)

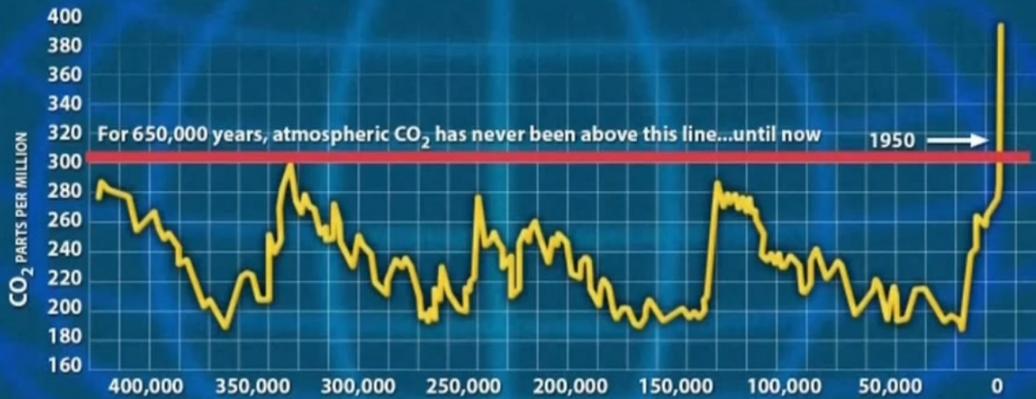




Conversations with Great Minds - Guy McPherson / Human Extinction in our Lifetime?

Press **Esc** to exit full screen

**Carbon dioxide levels did not exceed 300ppm for the last 650,000 years, but are now 400ppm...**



**...carbon dioxide levels today are likely higher than for the last 20 million years**



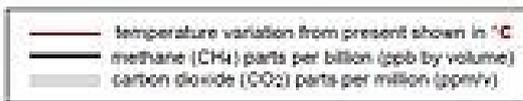
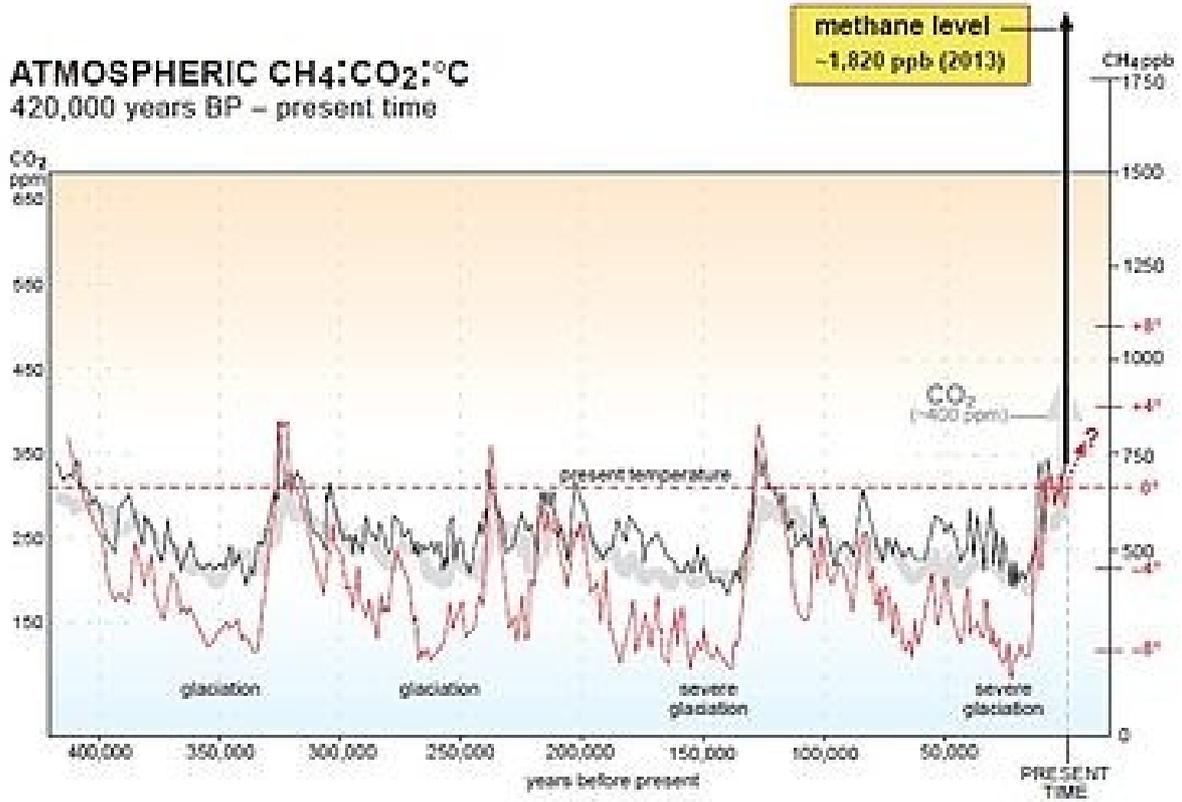
CONVERSATIONS WITH GREAT MINDS



MOSCOW 03:31

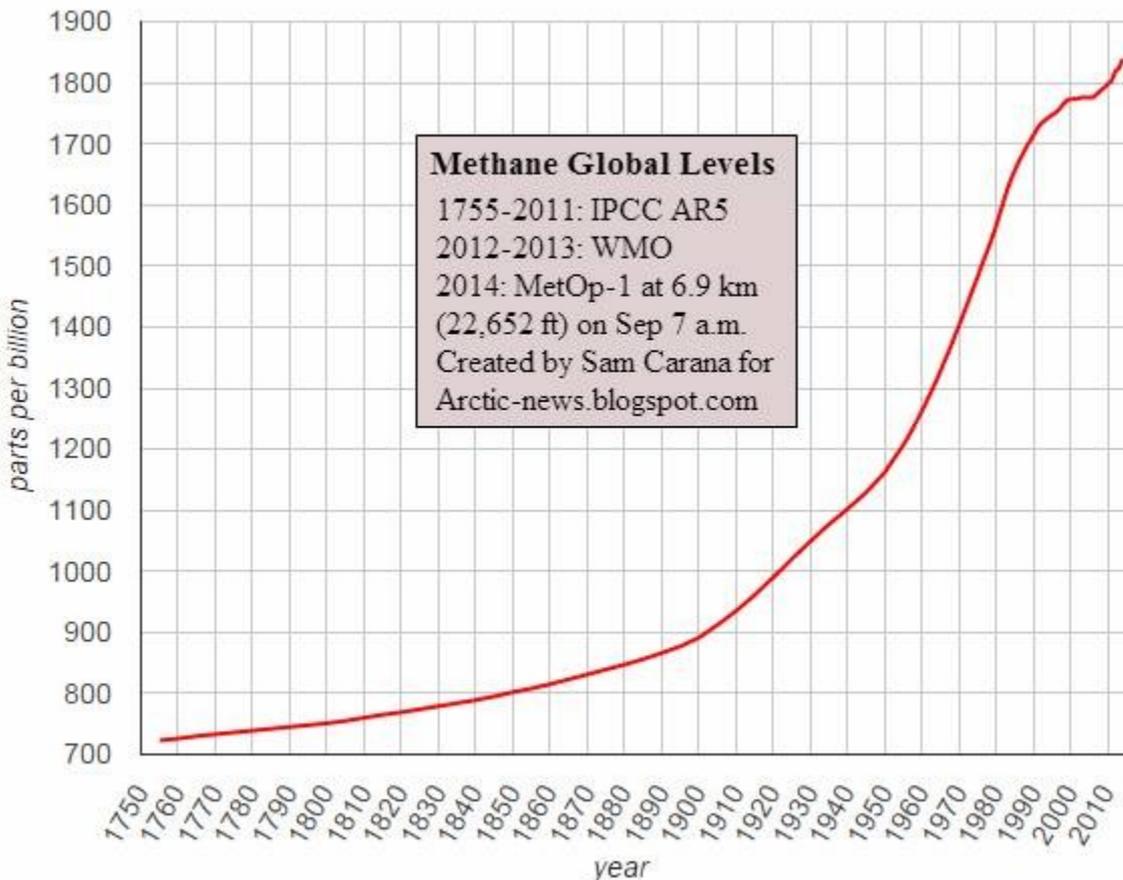
WWW.RT.COM

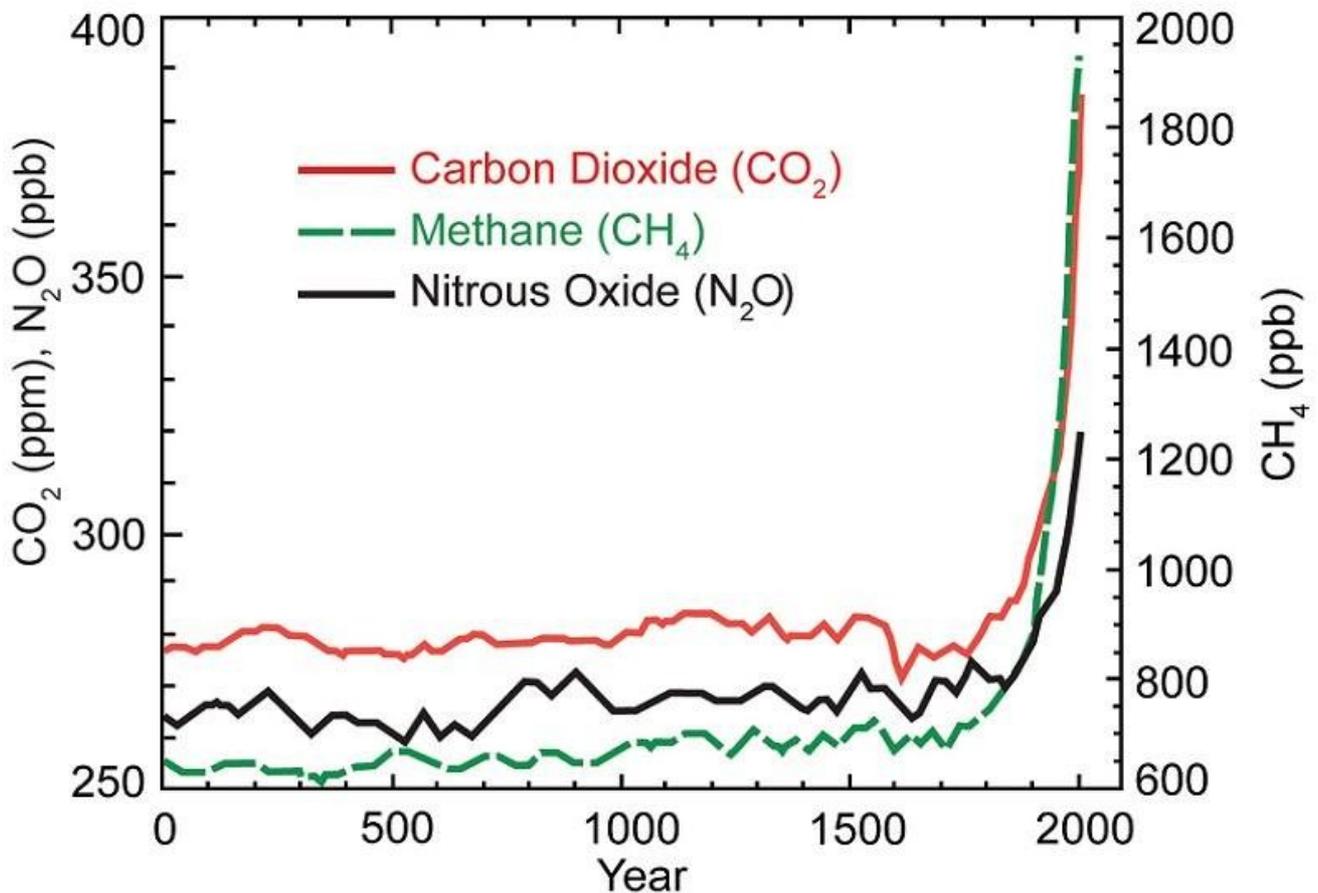
# ATMOSPHERIC CH<sub>4</sub>:CO<sub>2</sub>:°C 420,000 years BP – present time



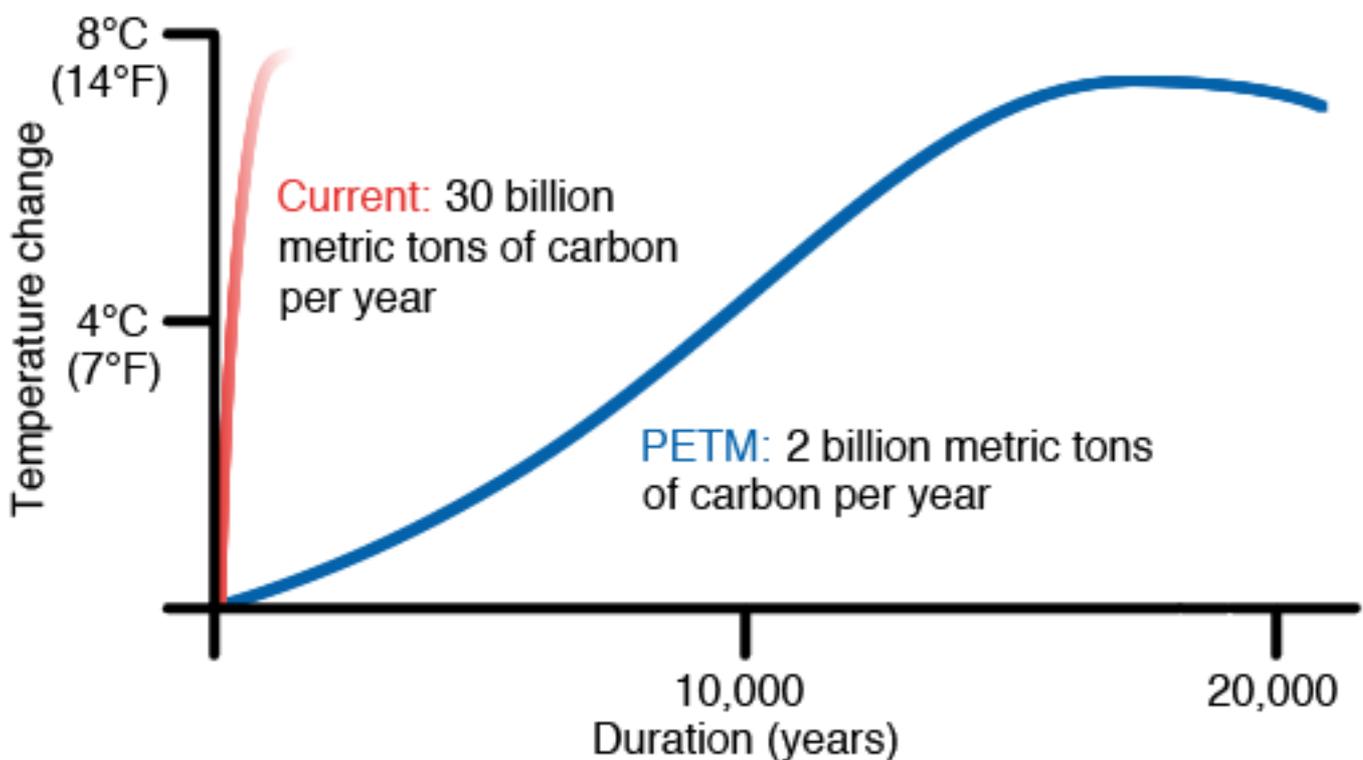
Based on Antarctic and Greenland ice-core data, and atmospheric data from Cape Grim, Tasmania. Vostok ice-core data: Petit et al. Nature (352:692, 1999). Law Dome ice-core data: Etheridge et al. Journal of Geophysical Research (1996). Cape Grim Station data: CSIRO Atmospheric Research and Bureau of Meteorology. °C between 100,000 and 420,000 years BP from IPCC.

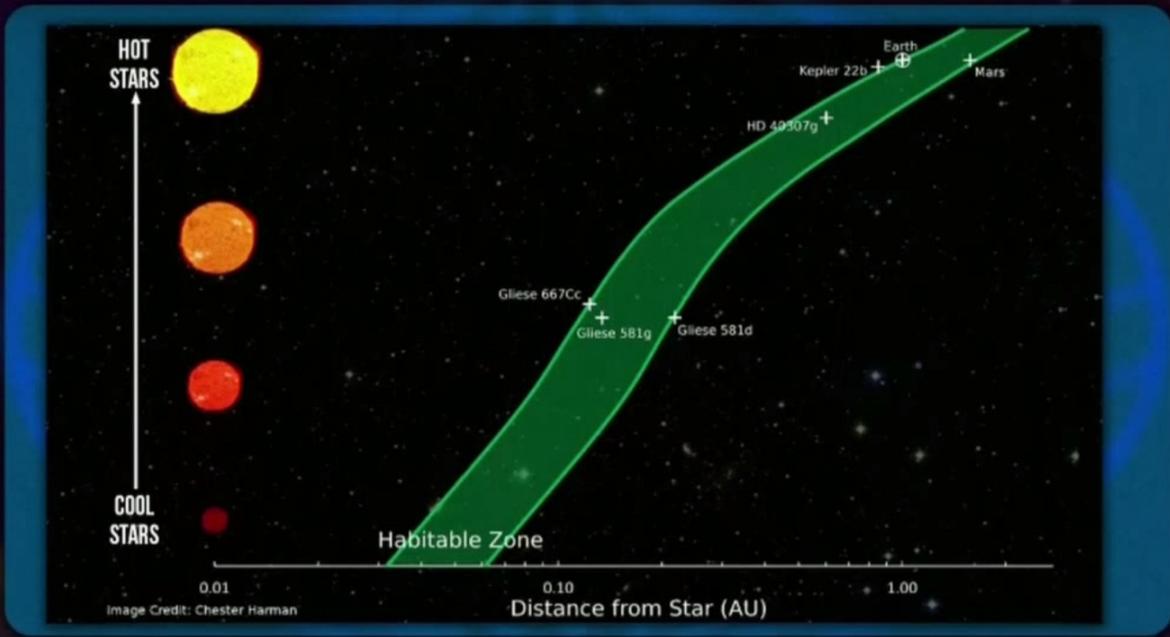
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Rate of temperature change today (red) and in the PETM (blue). Temperature rose steadily in the PETM due to the slow release of greenhouse gas (around 2 billion tons per year). Today, fossil fuel burning is leading to 30 billion tons of carbon released into the atmosphere every year, driving temperature up at an incredible rate. Figure from <http://www.wunderground.com/climate/PETM.asp?MR=1>





# CONVERSATIONS WITH GREAT MINDS

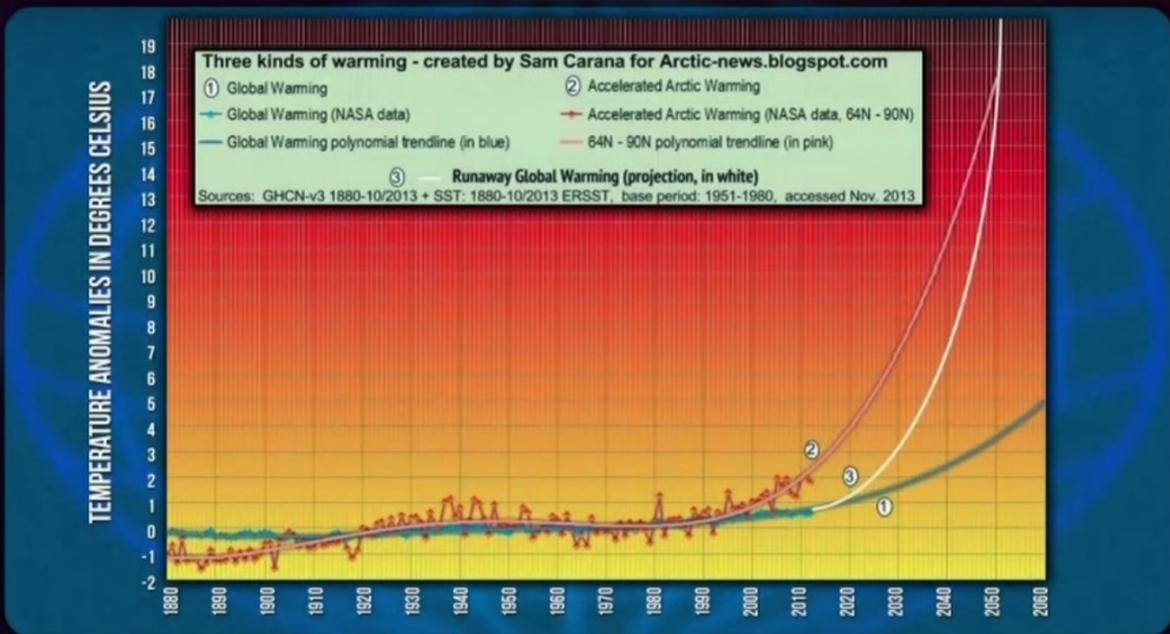


MOSCOW 03 32

TWO FEMALE JOURNALISTS WORKING FOR AP SHOT IN #AFGHANISTAN, ONE KILLED

▶ 3:06 / 27:43

CC 🔊 🔍



# CONVERSATIONS WITH GREAT MINDS



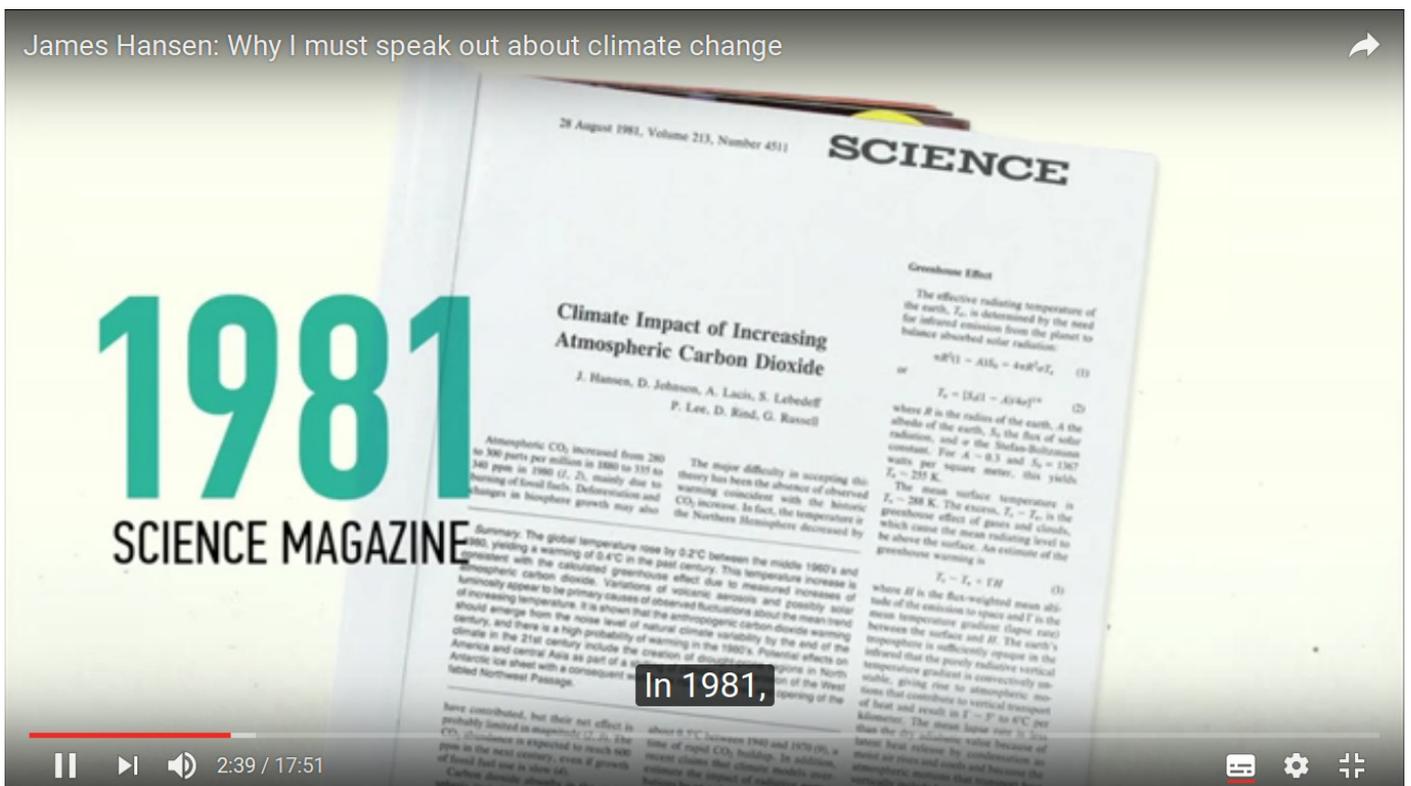
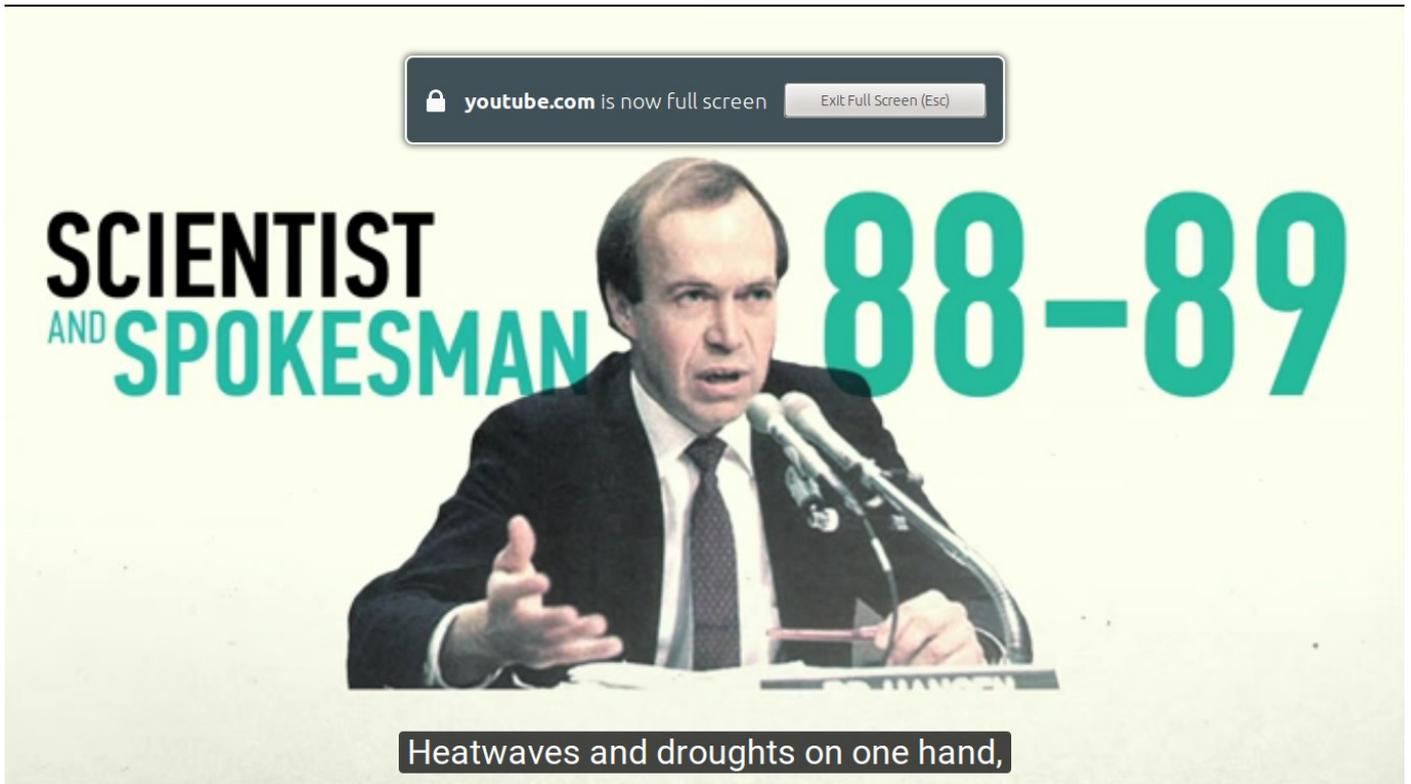
NEW YORK 19 39

5 KILLED, 3 WOUNDED IN ATTACK AT ARMY CHECKPOINT IN #YEMEN

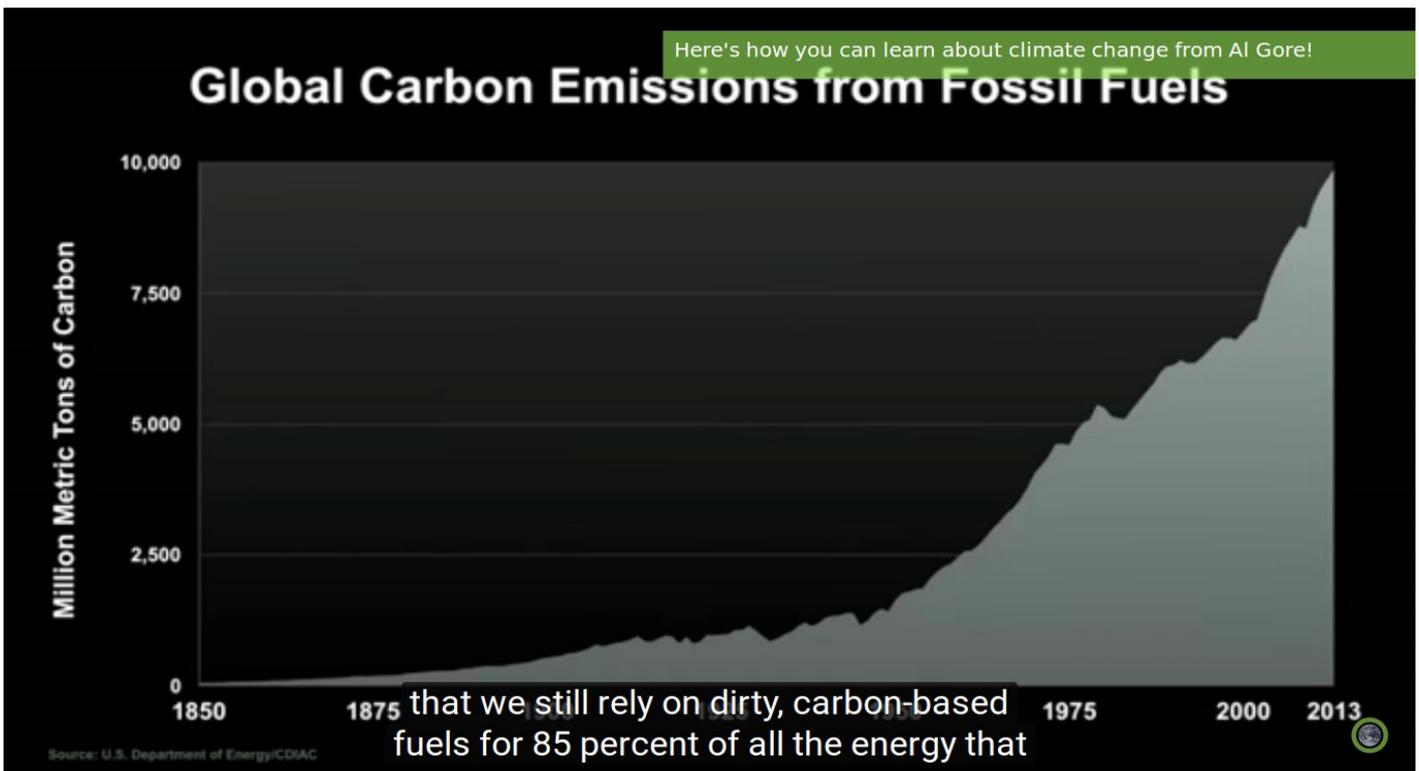
▶ 9:18 / 27:43

CC 🔊 🔍

# Father of Global Warming -



- Al Gore**
1. We are spewing **110 million tons of heat-trapping global warming pollution** into it every 24 hours, free of charge, go ahead.
  2. We still rely on dirty, **carbon-based fuels for 85 percent of all the energy** that our world burns every year.
  3. **Accumulated amount of man-made, global warming pollution** that is up in the atmosphere now traps as much **extra heat energy as would be released by 400,000 Hiroshima-class atomic bombs exploding every 24 hours, 365 days a year.** Fact-checked over and over again, conservative, it's the truth.



Here's how you can learn about climate change from Al Gore!

be released by 400,000 Hiroshima-class atomic bombs exploding every 24 hours, 365 days a



Here's how you can learn about climate change from Al Gore!

The energy trapped by man-made global warming pollution is now  
"...equivalent to exploding  
**400,000**  
Hiroshima atomic bombs  
per day 365 days per year."

James Hansen  
Former Director of NASA's Goddard Institute for Space Studies

year. Fact-checked over and over again, conservative, it's the truth. Now it's a big planet, but



Here's how you can learn about climate change from Al Gore!

**400,000**  
**Times per day**

that is a lot of energy, particularly when  
you multiply it 400,000 times per day. And

Source: AtomCentral.com



Here's how you can learn about climate change from Al Gore!

**400,000**  
**Times per day**

all that extra heat energy is heating up the  
atmosphere, the whole earth system.

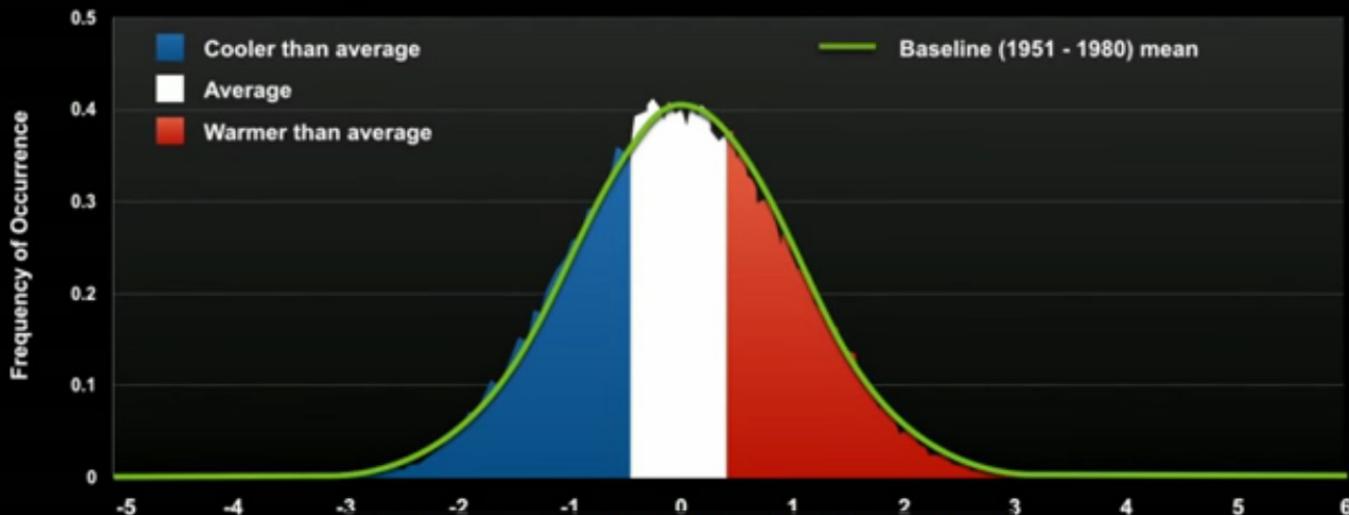
Source: AtomCentral.com



[Al-Gore-energy-increase-on-Earth-per-day](#)

# Summer Temperatures Have Shifted

1951 – 1980



of what we used to think of as the normal distribution of temperatures. The white represents

Source: Hansen, et al., "Global Temperature"



1983 – 1993

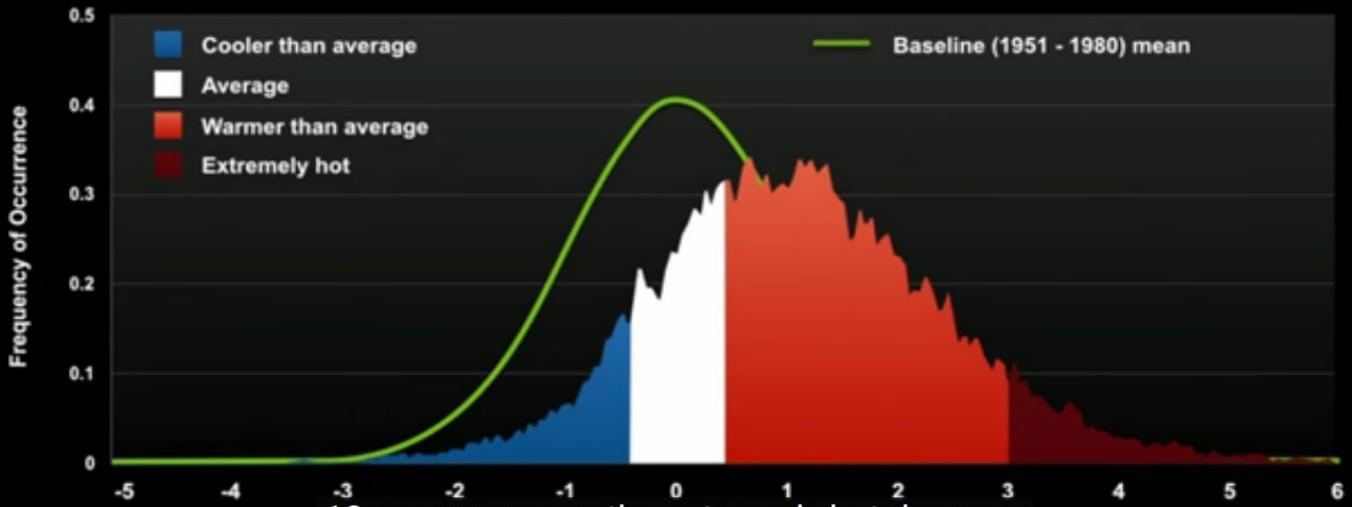


the 1980s. And you'll see in the lower right-hand corner the appearance of statistically significant

Source: Hansen, et al., "Global Temperature"



1994 – 2004

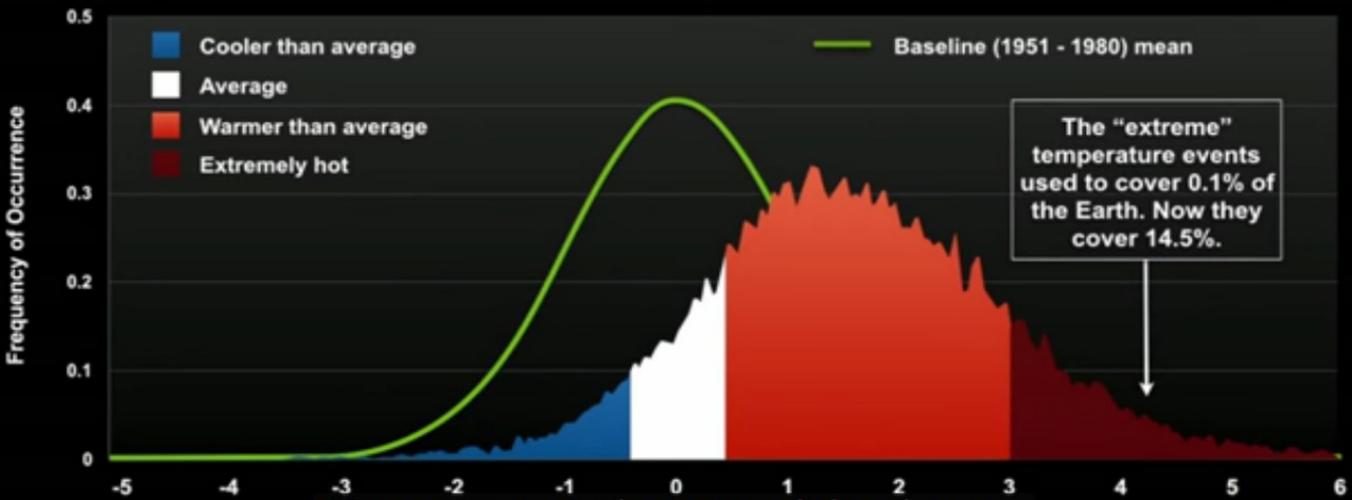


10 years, you see the extremely hot days are now more numerous than the cooler than average

Source: Hansen, et al., "Global Temperat



2005 – 2015



10 years, you see the extremely hot days are now more numerous than the cooler than average

Source: Hansen, et al., "Global Temperat



[Boiling Frog Experiment -- What do you think is the frog's fate- Watch more.](#)

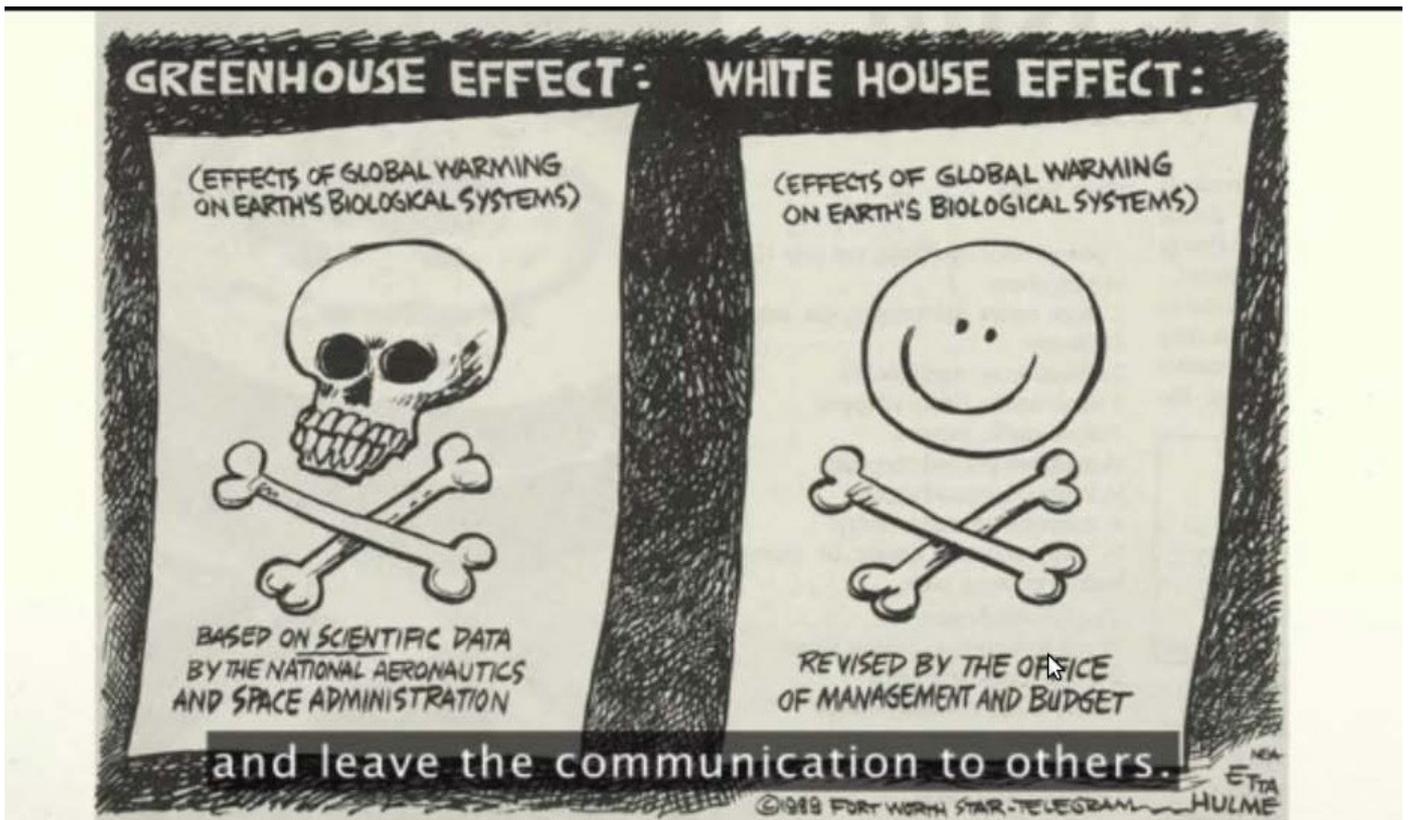
[Climate Change: The 40 Year Delay Between Cause and Effect](#)

## 14 of the 15 Hottest Years on Record Have Occurred Since the Year 2001



So we're having record-breaking temperatures.  
Fourteen of the 15 of the hottest years ever

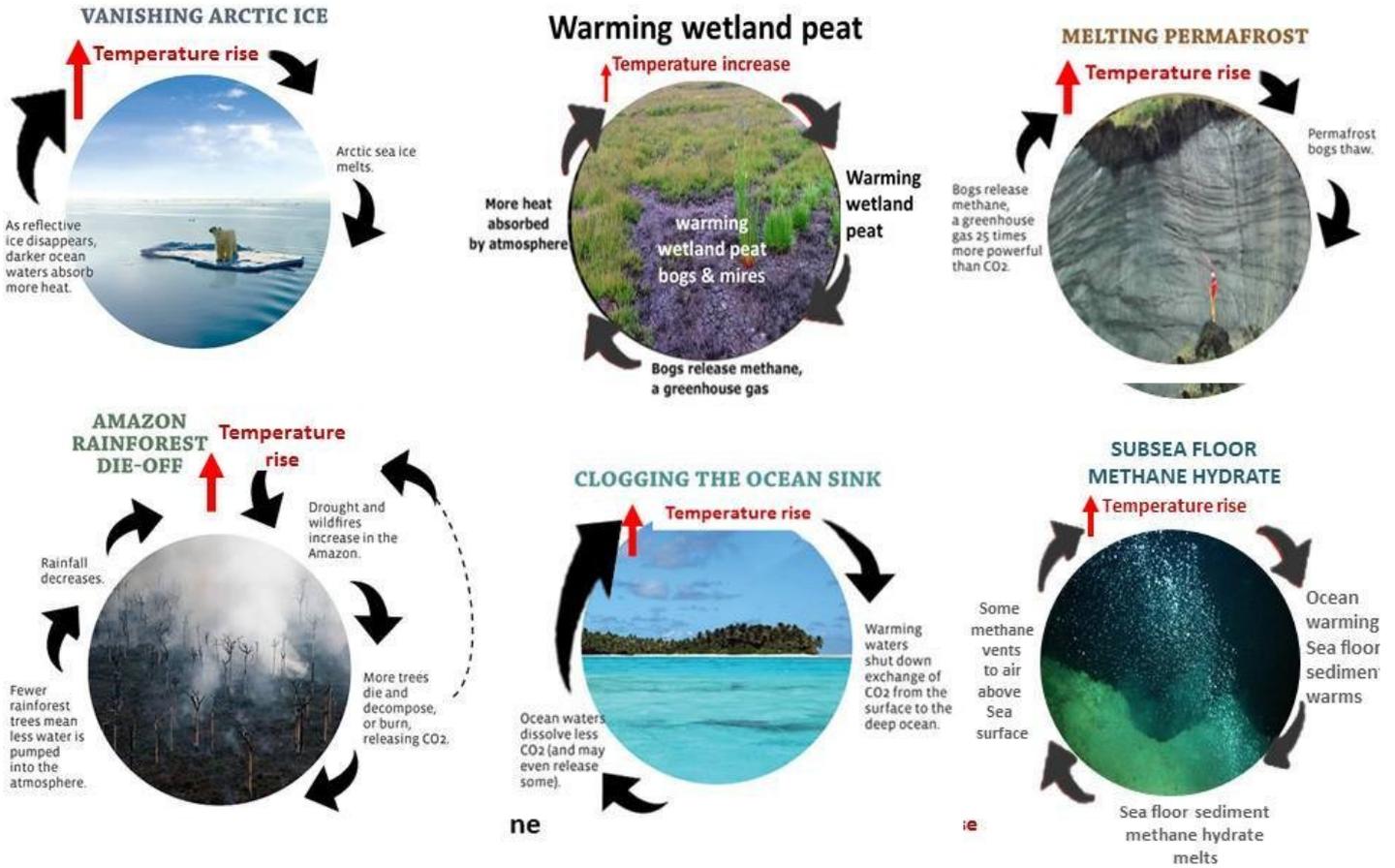
Source: NASA/GISS



[Global-warming-hoopla-James-Hansen-NASA](#)

# 69 Self-Reinforcing Feedback Loops-

## Some large +ve amplifying feedbacks



Conversations with Great Minds - Guy McPherson / Human Extinction in our Lifetime?

2007 में यदि हम सारी औद्योगिक गतिविधियाँ रोके देते तो इस धरती को प्रचलित तरीकों से बचाने की एक संभावना बन सकती थी - प्रो गाय मेकफियरसन

**RT** CONVERSATIONS WITH GREAT MINDS **THE FUTURE PICTURE**

BERLIN 01 32 SEVERAL #PALESTINIANS INJURED IN CLASHES WITH ISRAELI TROOPS

2:20 / 27:43

धन्यवाद - Thank you.







