

More than any other time in human history, mankind faces a crossroads. One path leads to despair and utter hopelessness. The other, to total extinction. Let us pray we have the wisdom to choose correctly.

Woody Allen



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Human extinction will result from absence of habitat for humans, not from our inability to adapt to changes in temperature

# Warning: climate change

George Perkins Marsh (September 1847): Effects of burning fossil fuels on climate change,  
urban heat islands

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Svante Arrhenius (April 1896, *Philosophical Magazine and Journal of Science*):

1 C temperature increase by 2000

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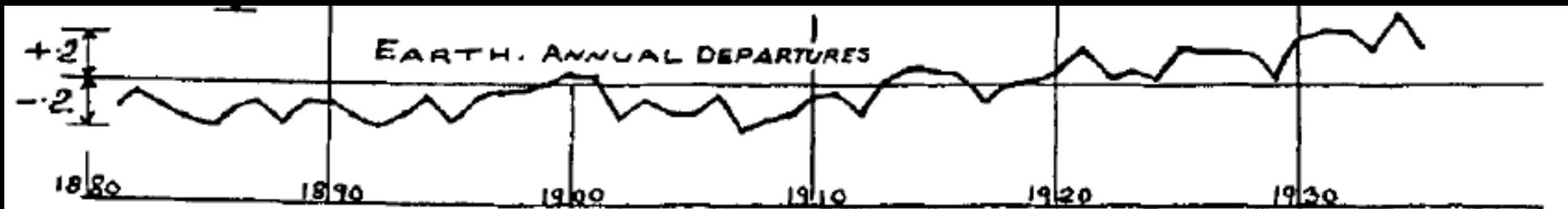


FIG. 4.—Temperature variations of the zones and of the earth. Ten-year moving departures from the mean, 1901-1930, °C.

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Frank Capra (1958, *The Unchained Goddess*)

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industrial civilization is degrading, exhausting, and enslaving, and ... threatens to cause human extinction

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NOAA (January 2014): “the last below-average temperature for any month was February 1985”

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Robert Watson, NASA, to Senate Environment Subcommittee on Environmental Pollution (June 1986): “We can expect significant changes in climate in the next few decades”

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*Nature Climate Change* (14 January 2014): overall public evaluation of climate engineering is negative

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John Davies (20 September 2013, Arctic Methane Emergency Group):  
“The world is probably at the start of a runaway Greenhouse Event  
which will end most human life on Earth before 2040”

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Climate change is irreversible (cf. [350.org](http://350.org))  
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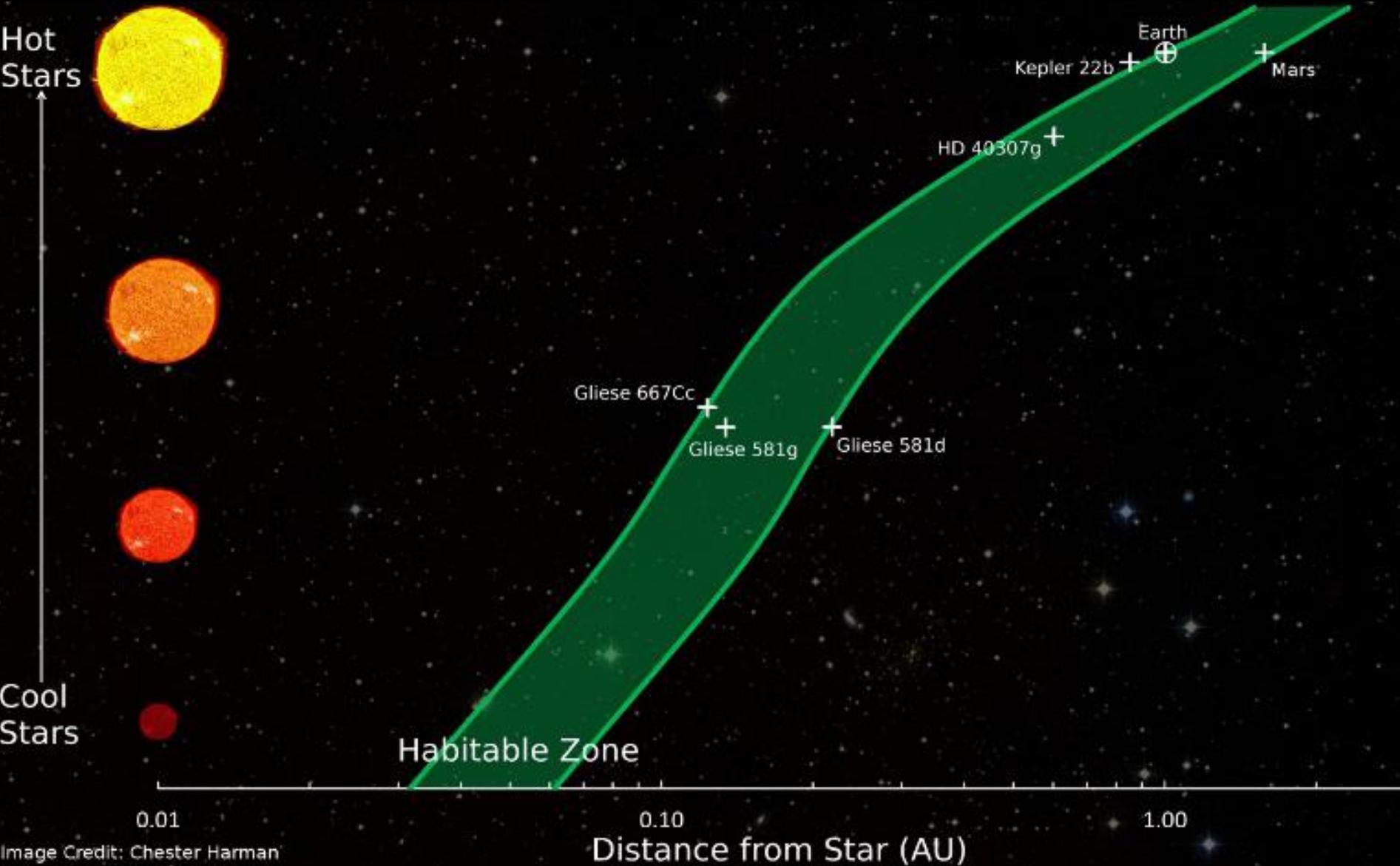


Image Credit: Chester Harman

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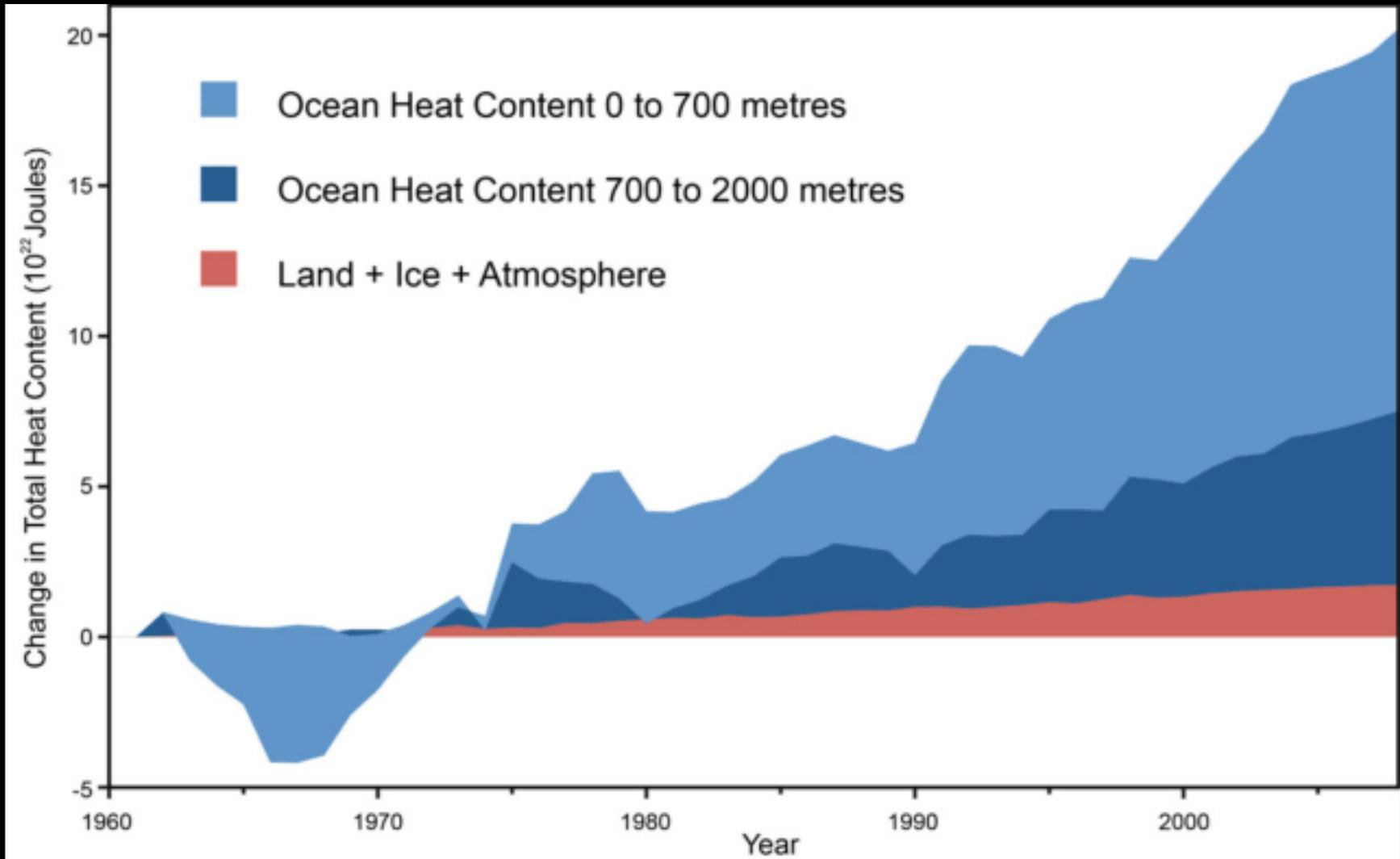
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Clive Hamilton: “without [atmospheric sulphates associated with industry] ... Earth would be an extra 1.1 C warmer”  
(April 2013, *Earthmasters*)

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*Geophysical Research Letters: Acceleration during last 15 years*  
(March 2013)



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Minor increase in temperature sufficient to trigger methane release  
(*Geophysical Research Letters*, June 2010)

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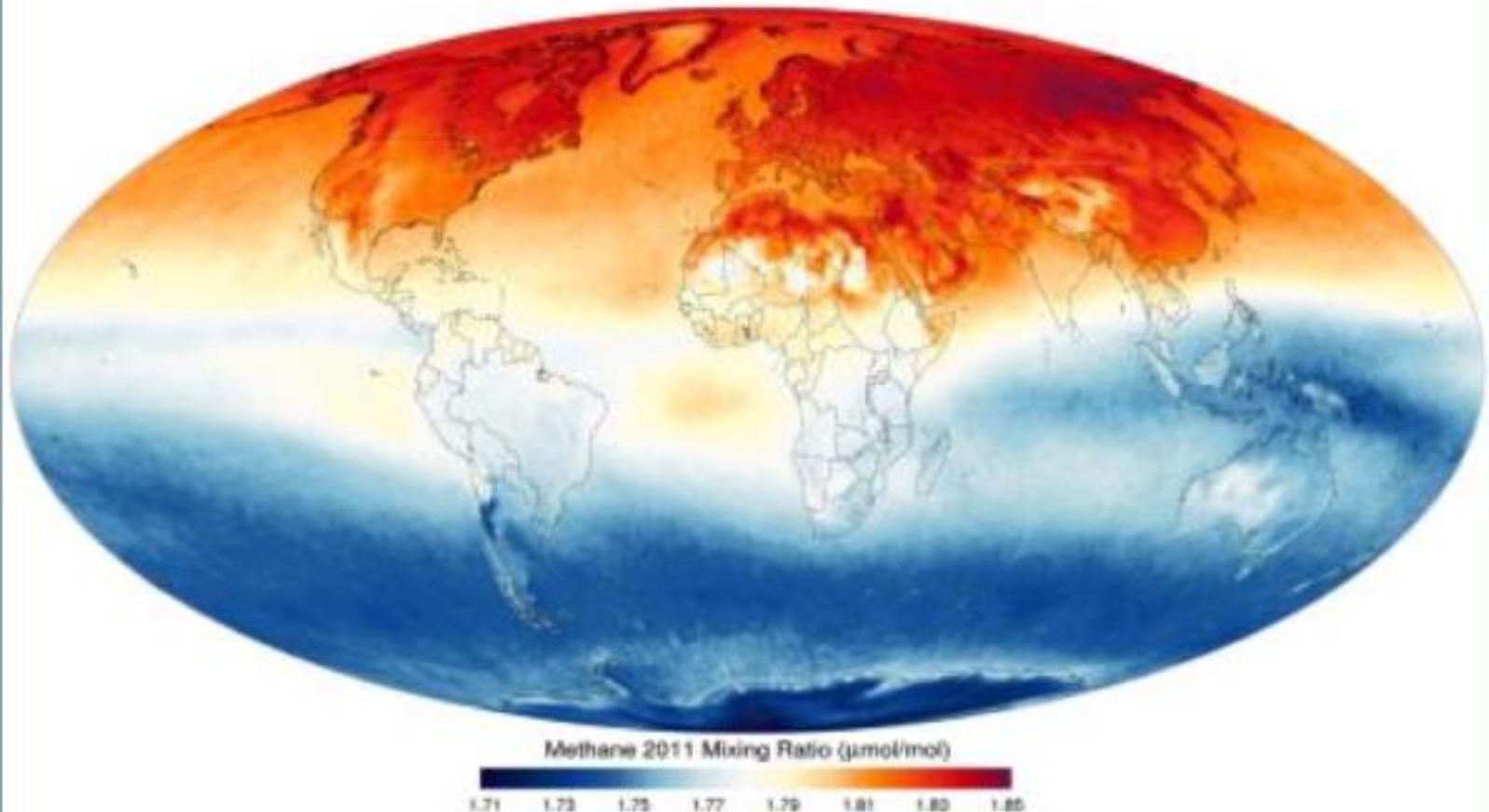
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“The Gulf Stream transport rate started the methane hydrate (clathrate) gun firing in the Arctic in 2007 when its energy/year exceeded 10 million times the amount of energy/year necessary to dissociate subsea Arctic methane hydrates” (Malcolm Light, January 2014)

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**Methane concentration: Global distribution**



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Drought-induced mortality of trees contributes to increased decomposition of carbon dioxide into the atmosphere and decreased sequestration of atmospheric carbon dioxide (*Nature*, November 2000: summaries in *Nature*, February 2013 and *Frontiers in Plant Science*, August 2013)

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Russian forest and bog fires (NASA, August 2012) (*Proceedings of the National Academy of Sciences*, July 2013: highest rate in at least 10,000 years)

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The Beaufort Gyre apparently has reversed course (U.S. National Snow and  
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Antarctic permafrost is melting, too (*Scientific Reports*, July 2013)

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Sea-level rise causes slope collapse, tsunamis, and release of methane  
(*Geology*, September 2013)

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Fewer clouds form as the planet warms (*Nature*, January 2014)

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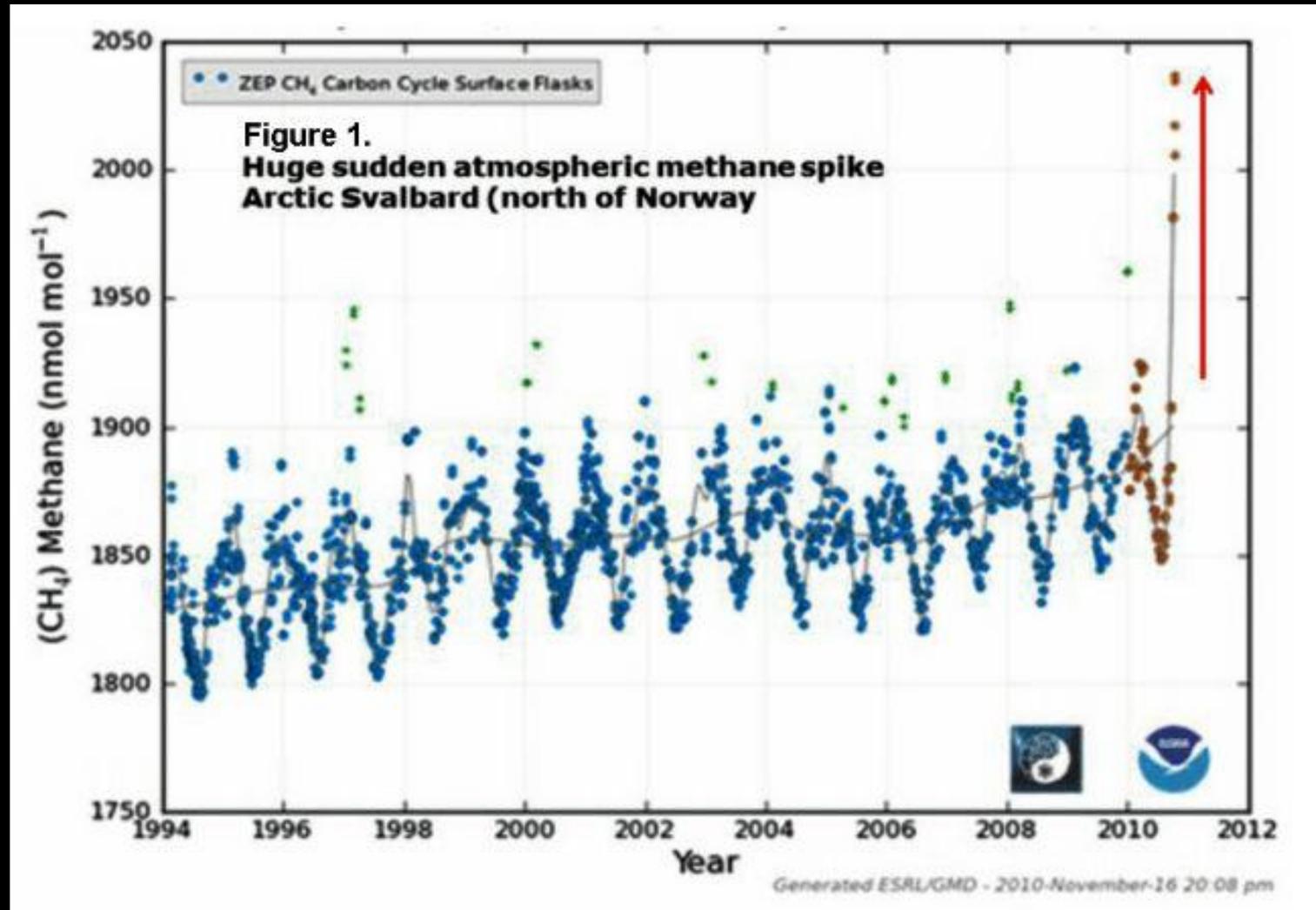
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Supertankers are taking advantage of the slushy Arctic  
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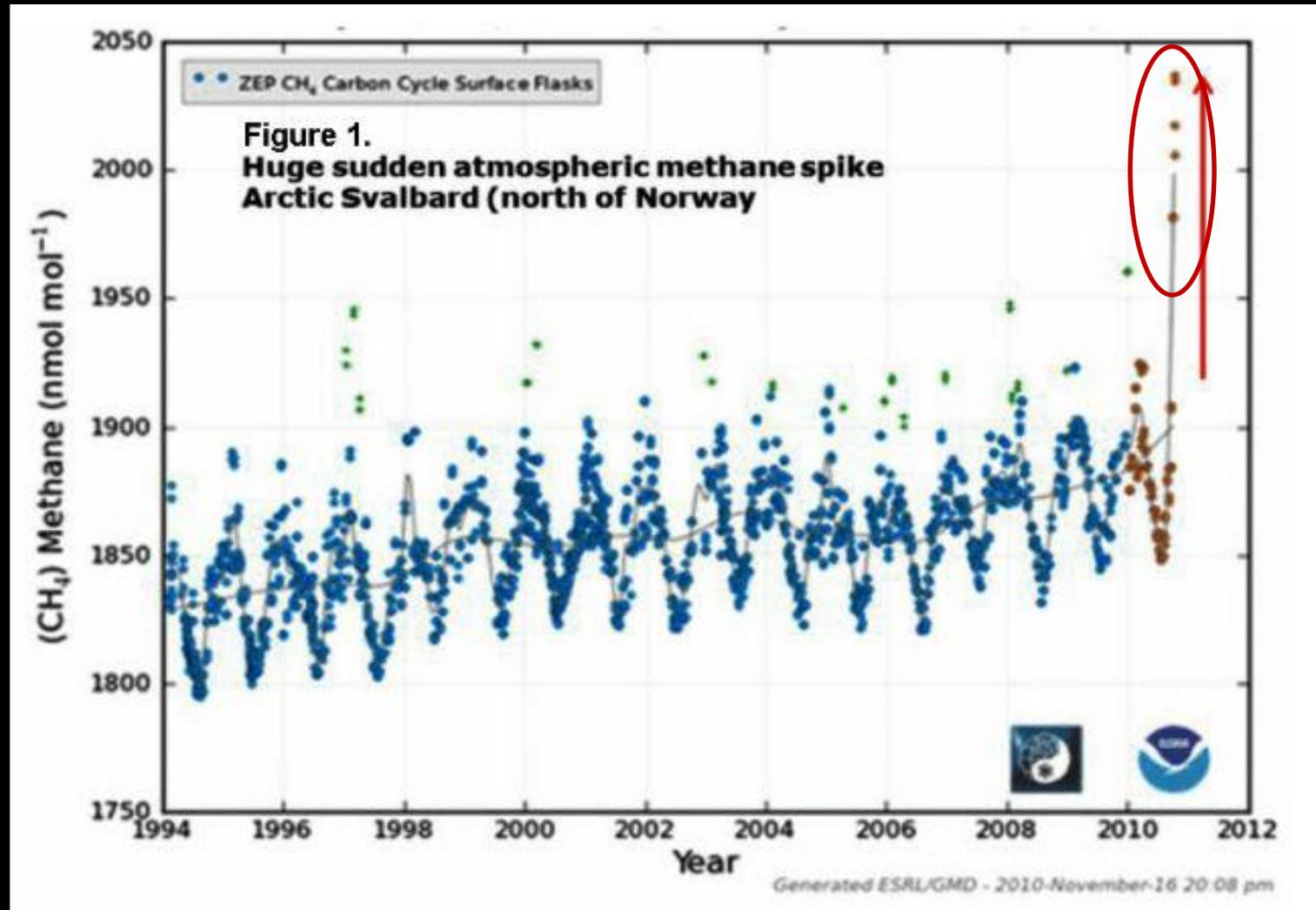
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Arctic Methane Emergency Group: Extinction by mid-century  
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Methane plumes up to 150 km across (July 2013)

equivalent to 1,000 to 10,000 Gigatons of carbon  
(vs. 226 Gigatons thus far)

# Arctic Ocean methane hydrates

AMEG (Malcolm Light): Extinction by mid-century  
(9 February 2012)

“methane release will accelerate exponentially, release huge quantities of methane into the atmosphere and lead to the demise of all life on earth before the middle of this century”

2031 Northern Hemisphere

2047 Southern Hemisphere

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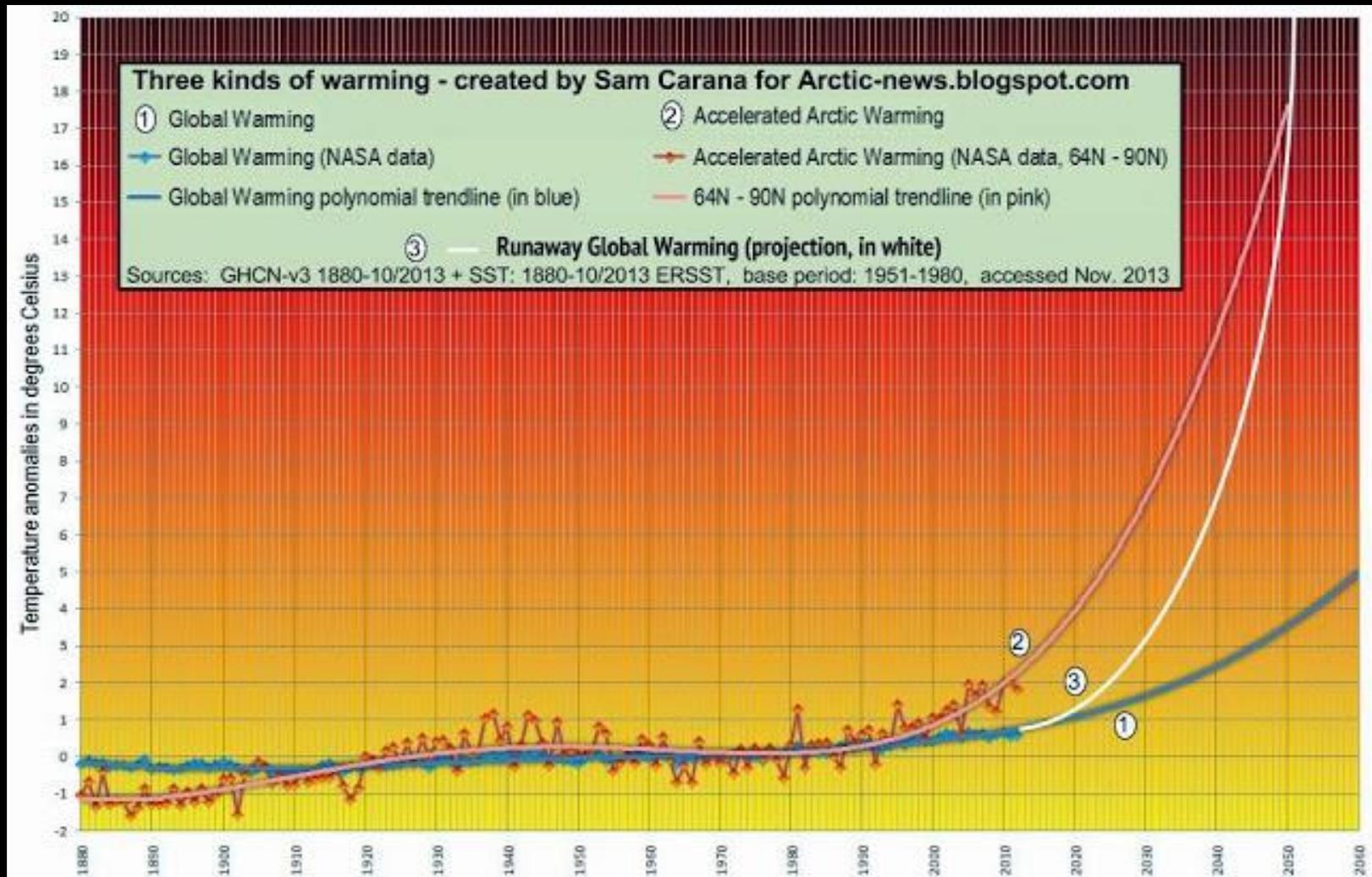
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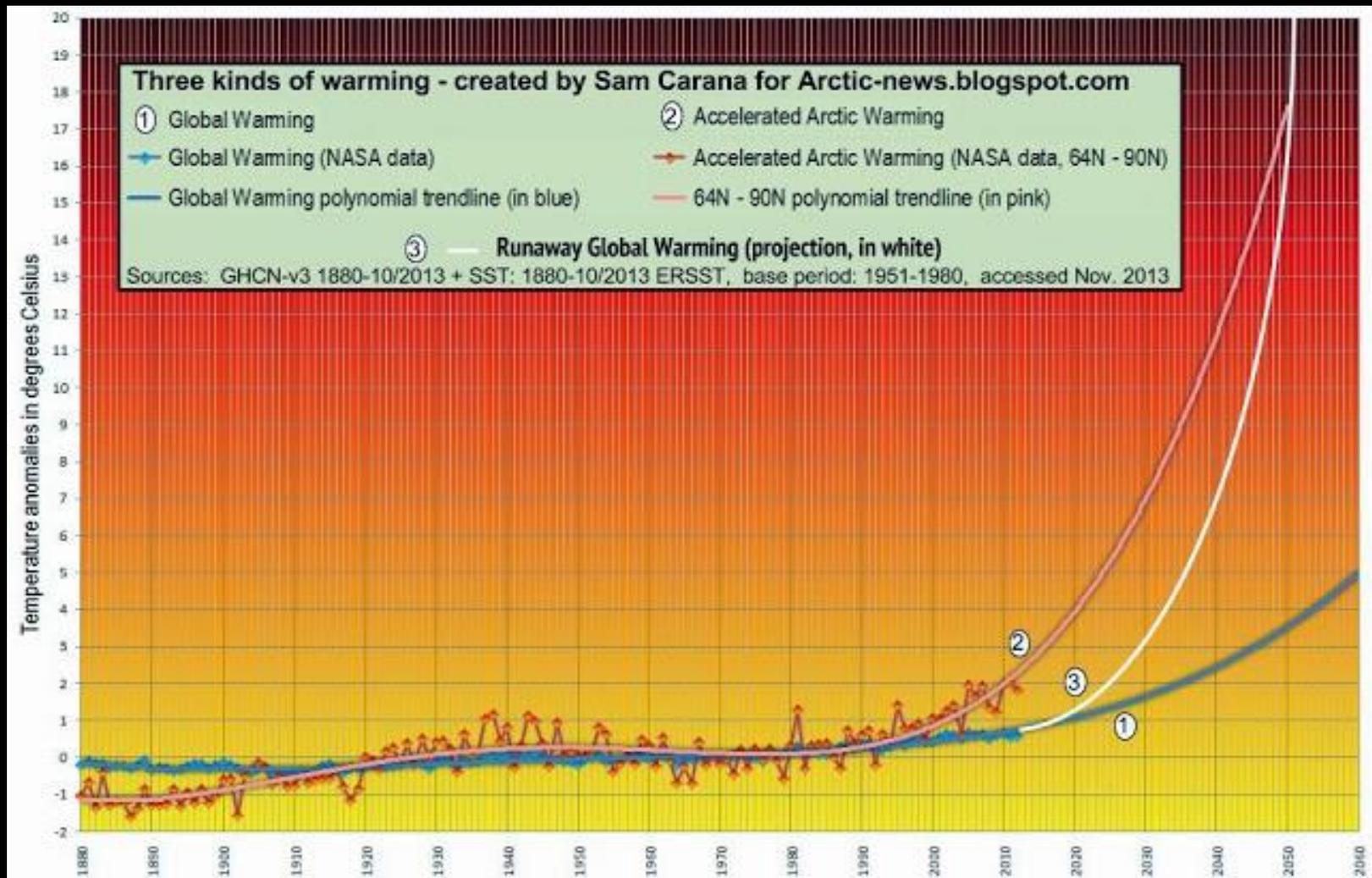
“rapid, unpredictable and non-linear responses that could lead to extensive ecosystem damage”

# Arctic Ocean methane hydrates

AMEG (Sam Carana): anomalies  $\geq 20$  C by 2050  
(28 November 2013)



# Arctic Ocean methane hydrates



“The greatest shortcoming of the human race is our inability to understand the exponential function” (Albert Bartlett)

Now what?



# Now what? The political response

Barack Obama (14 November 2012):

"If the message is somehow we're going to ignore jobs and growth simply to address climate change, .... I won't go for that"

# Now what? The political response

Briefing presented by Alliance of Small Island States (AOSIS) at  
*Conference of Parties 15* (Copenhagen 2009):

"THE LONG-TERM SEA LEVEL THAT CORRESPONDS TO CURRENT CO<sub>2</sub> CONCENTRATION IS ABOUT 23 METERS ABOVE TODAY'S LEVELS, AND THE TEMPERATURES WILL BE 6 DEGREES C OR MORE HIGHER. THESE ESTIMATES ARE BASED ON REAL LONG TERM CLIMATE RECORDS, NOT ON MODELS."

# Now what? Individual response

Bruce Springsteen: “In the end what you don’t surrender, well the world just strips away”

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Zen: Let go, or be dragged

Popular culture: Carpe diem

Nietzsche: “Live as though the day were here”

Leon Staff: “Even more than bread we now need poetry, in a time when it seems that it is not needed at all.”

# Really good news

DNA assures our unique stature

(i.e., you get to die)

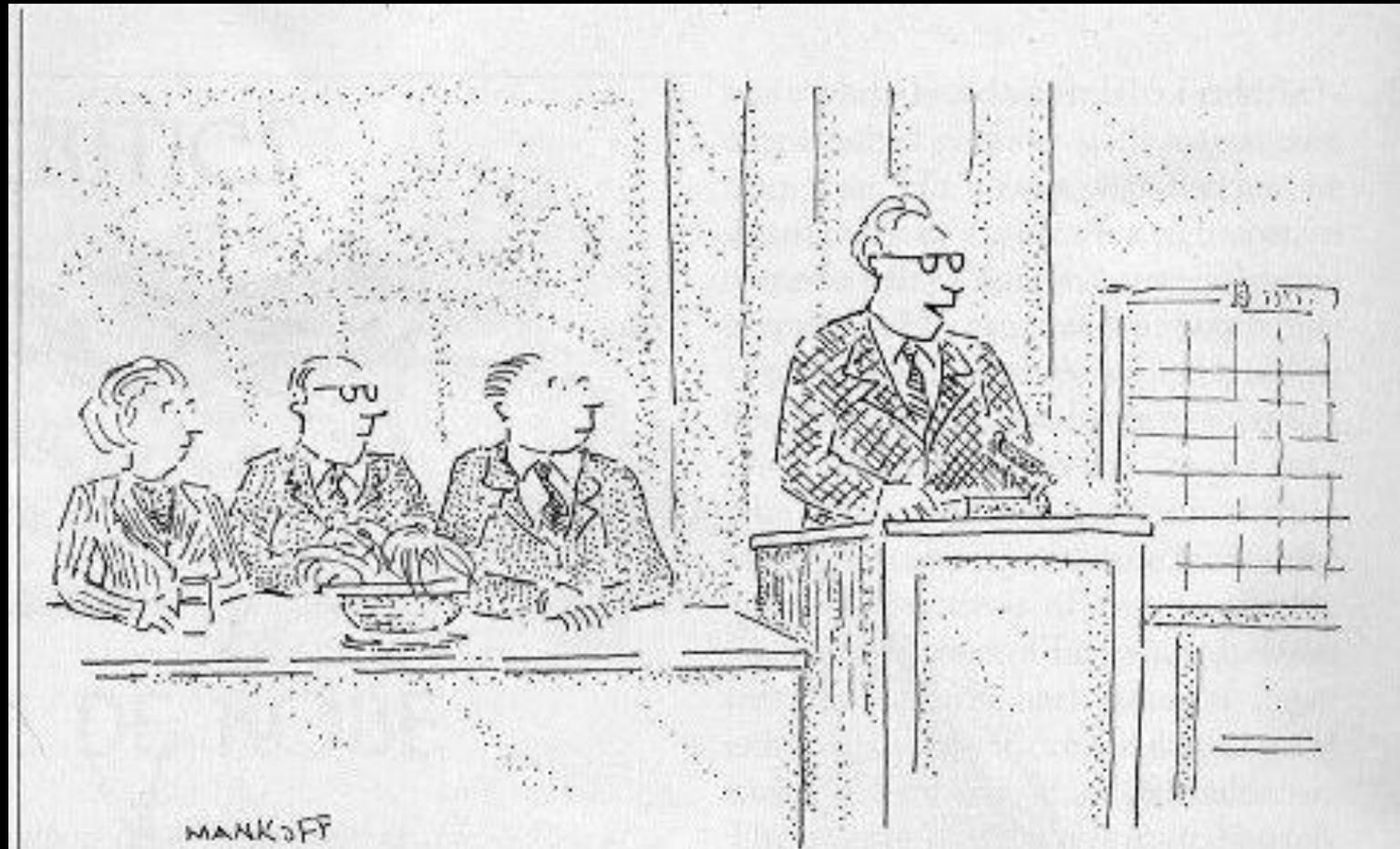
# Really good news

DNA assures our unique stature

Richard Dawkins: “In the teeth of these stupefying odds it is you and I that are privileged to be here, privileged with eyes to see where we are and brains to wonder why.”

# Earth in hospice

## Pursuits



*"And so, while the end-of-the-world scenario will be rife with unimaginable horrors, we believe that the pre-end period will be filled with unprecedented opportunities for profit."*

Earth in hospice

Pursuits



Earth in hospice

Love

Lives of excellence



# Earth in hospice

“Action is the antidote to despair”

(Edward Abbey)



# Nature Bats Last

Humans have tinkered with the natural world since we appeared on the evolutionary stage. Our days may be numbered: As the home team, Nature Bats Last.

[guymcpherson.com](http://guymcpherson.com)

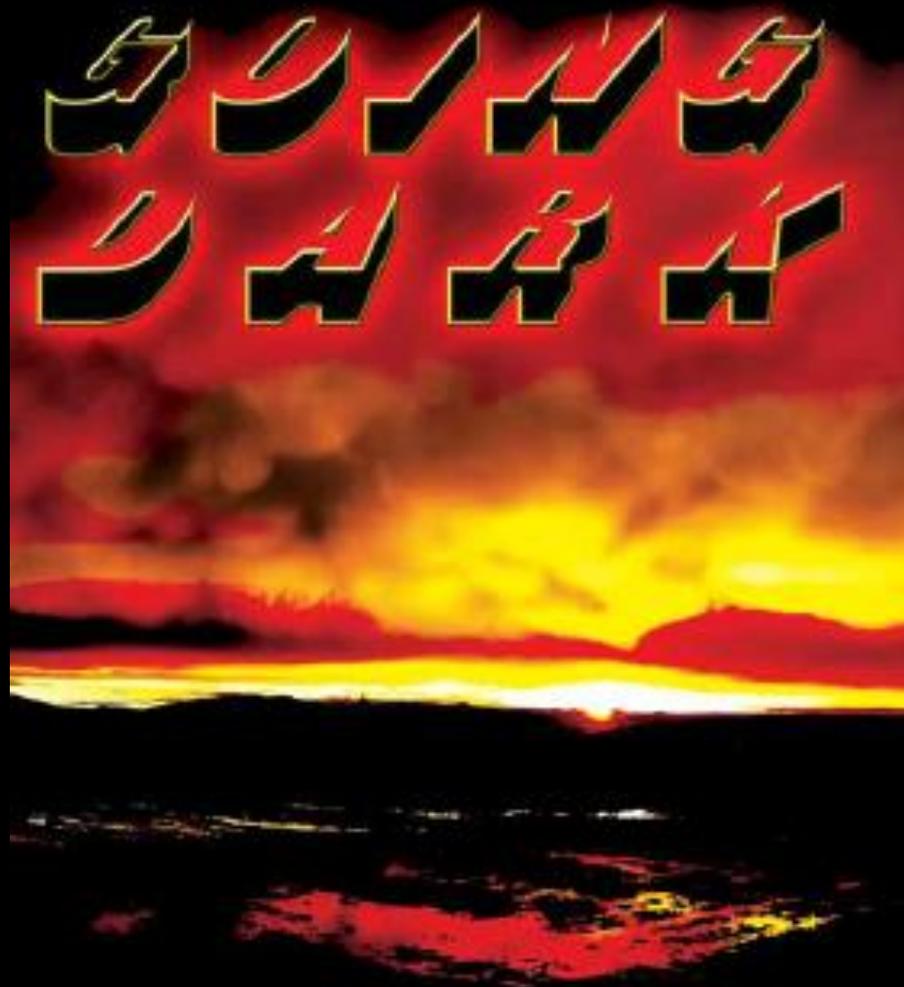


[transitionvoice.com](http://transitionvoice.com)

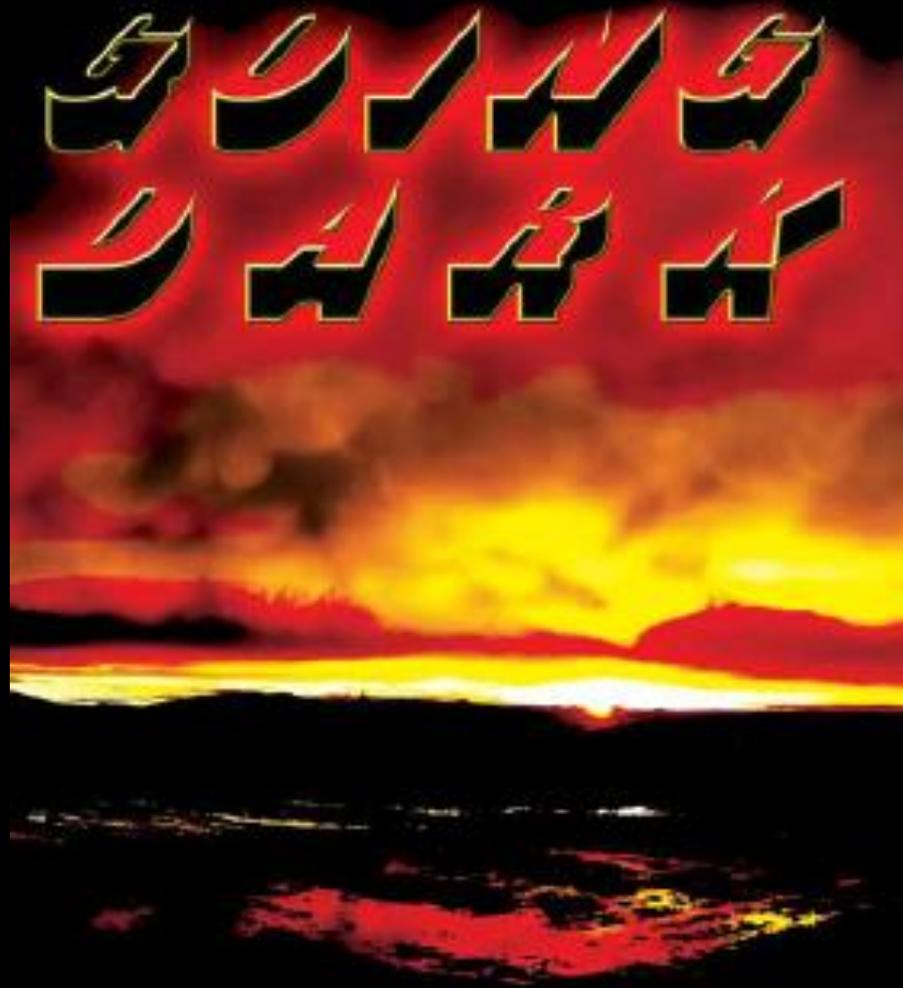
[Beyond Reskilling](http://beyondreskilling.org)

Preparing for an ambiguous future

[beyondreskilling.org](http://beyondreskilling.org)



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[guymcpherson.com/climate-chaos/](http://guymcpherson.com/climate-chaos/)

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to persist in delusion, however satisfying and  
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Those who are able to see beyond the shadows and  
lies of their culture will never be understood, let alone  
believed by the masses

Plato

