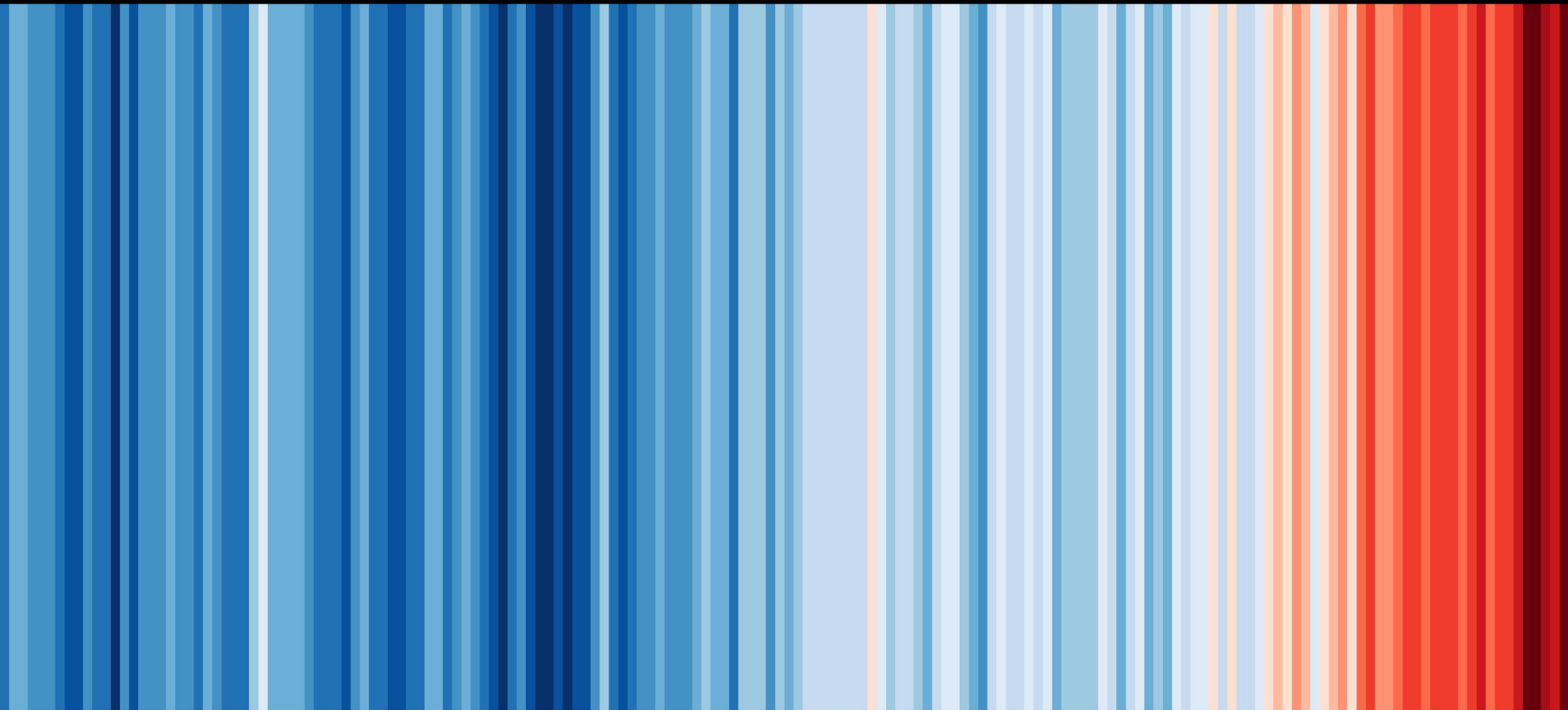


# Global temperature change (1850-2019)



1860

1890

1920

1950

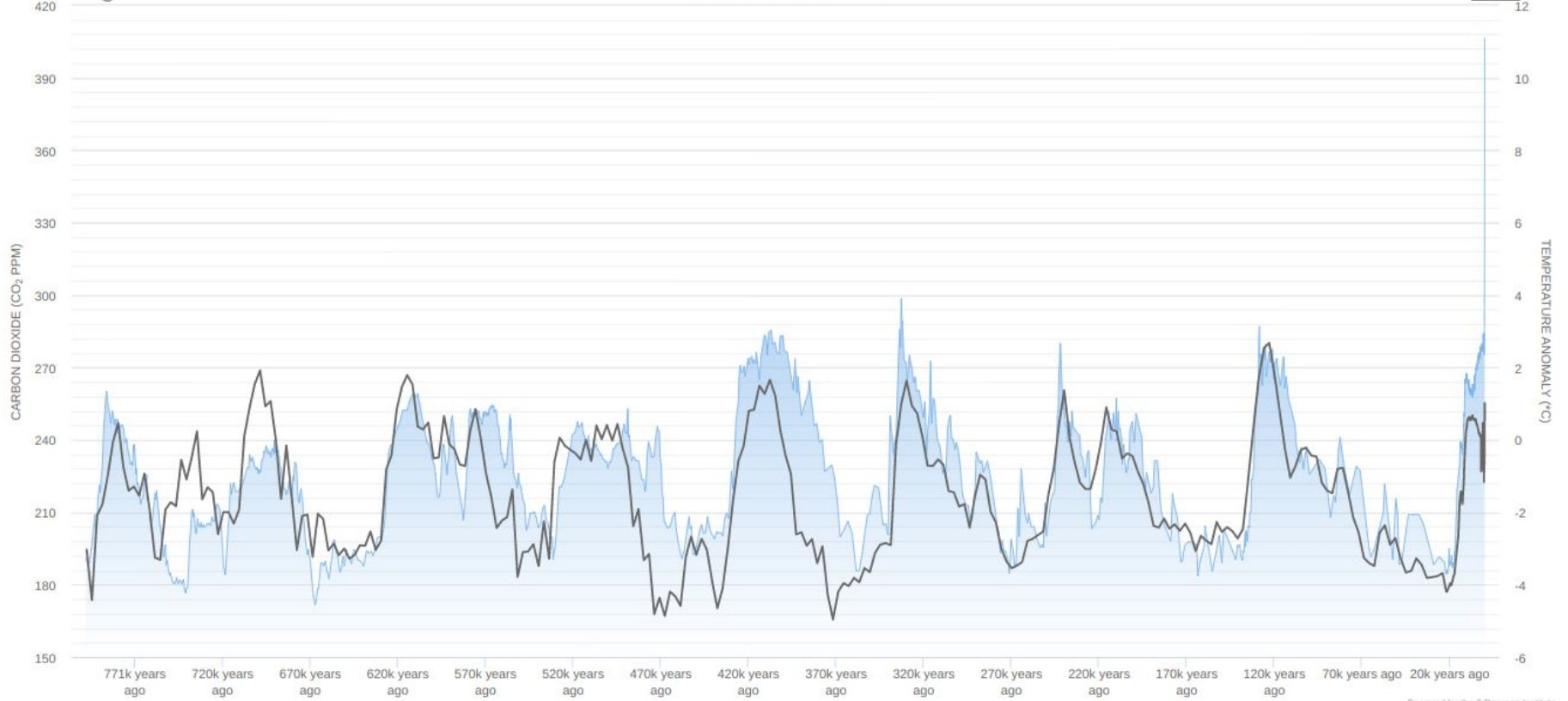
1980

2010



## GLOBAL CO<sub>2</sub> LEVELS

Click and drag in the plot area to zoom in



**The science is clear**

**We are facing an unprecedented  
global emergency**

**We must act now**

# Contents

<b>Emergency on Planet Earth</b>	<b>1</b>
<b>Introduction</b>	<b>3</b>
<b>Part 1: Back to the start... How did we get into this climate mess and is it really that bad?</b>	<b>9</b>
How can we be so sure that the Earth is heating?	9
Why should we care about a few degrees of heating?	12
Hasn't the Earth been hotter in the past?	13
What exactly are greenhouse gases and what is the greenhouse effect?	15
Can we be certain that humans are causing global heating?	17
Haven't natural fluctuations in carbon dioxide affected the Earth's temperature?	19
What's happened in the past few thousand years?	20
What's happened in the past 150 years?	21
What are greenhouse gas emissions like today?	23
We have been warned over and over!	24
<b>Part 2: It's getting hot in here... What's already happening to our planet as a result of global heating and why?</b>	<b>27</b>
What is already happening to our weather?	27
More extreme weather	27
Longer and more intense heatwaves	29
Longer and harsher droughts	31
More forest fires	32
More extreme storms and floods	33
Stronger hurricanes	37
What is global heating doing to our oceans, coastlines and wildlife?	38



# The Human Planet

How We Created  
the Anthropocene

Simon L. Lewis and  
Mark A. Maslin



"a massively entertaining compendium ...  
also massively important" - Bill McKibben



**THERE  
IS NO  
PLANET B**

A Handbook for the Make or Break Years

Mike Berners-Lee

PROFESSOR  
MARK MASLIN



# How to Save Our Planet

The Facts



# When will LEGO mini figures outnumber humans?

8 billion

Human population reaches 7 billion

Total minifigs produced could over take human population between 2016 and 2018

6

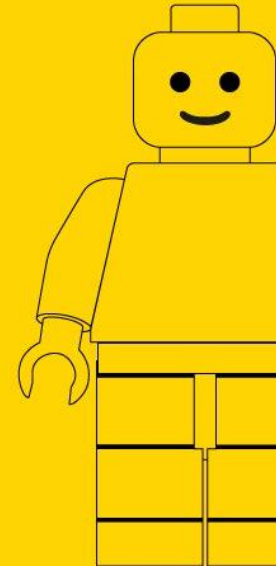
Minifig population over 5 billion

Minifig population over 4 billion

4

3.7 billion as minifig turns 25

2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019





# Microplastics 'significantly contaminating the air', scientists warn

**Discovery of pollution in snowfall from the Arctic to the Alps leads to call for urgent research on potential human health impacts**



▲ Scientists collect snow samples above the Arctic circle. Photograph: Melanie Bergmann/Alfred-Wegener-Institut/Science Advances

Even our own bodies now contain plastic waste. It's time to get drastic

*Gaby Hinsliff*



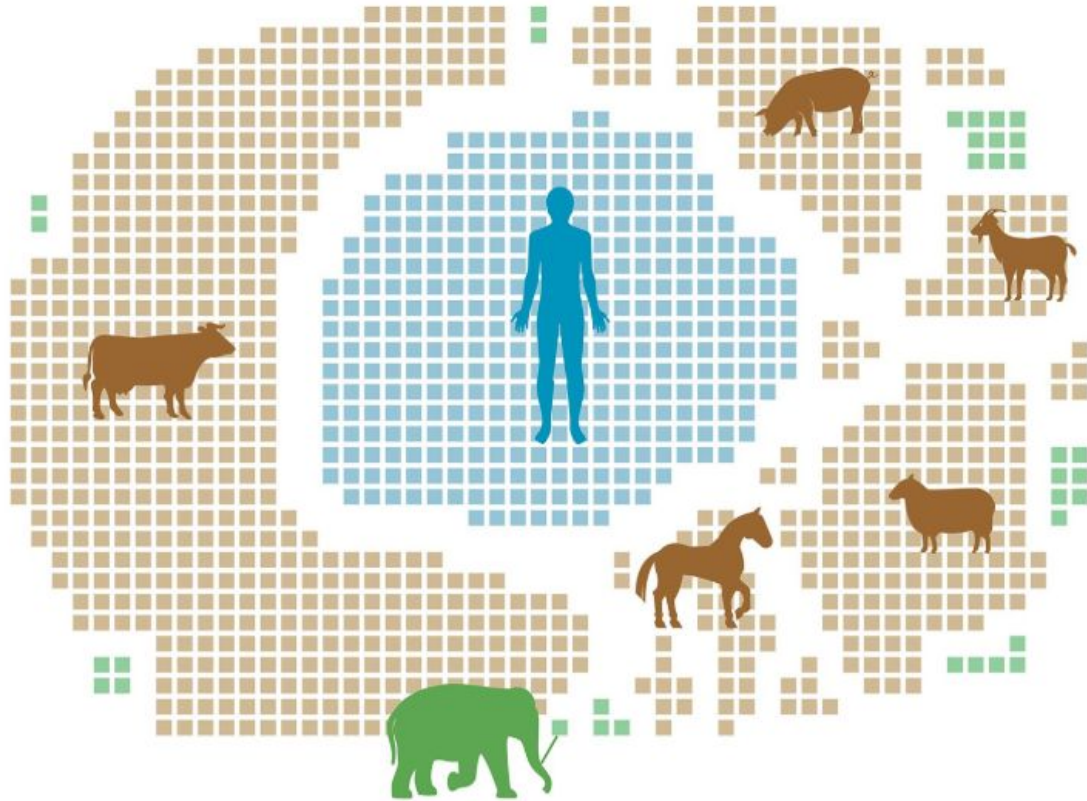
Banning straws and cotton buds isn't going to cut it. It won't be easy, but our over-reliance on the stuff must end



# The Earth's Land Mammals by weight

each square is 1,000,000 Tons

- Humans
- Our pets & livestock
- Wild animals



Source: Vaclav Smil (2003) and Bar-On *et al.* (2018)



Professor Mark Maslin  
@ProfMarkMaslin

## Weight of all land mammals



30% Humans 🧑👩👨👴👵

67% Human Livestock 🐄🐷🐖  
and pets 🐶🐱🐰🐹

3% Wild animals 🐘🐙🐻🦒

We slaughtered the megafauna

Now we are entering the 7th  
mass extinction 🌊

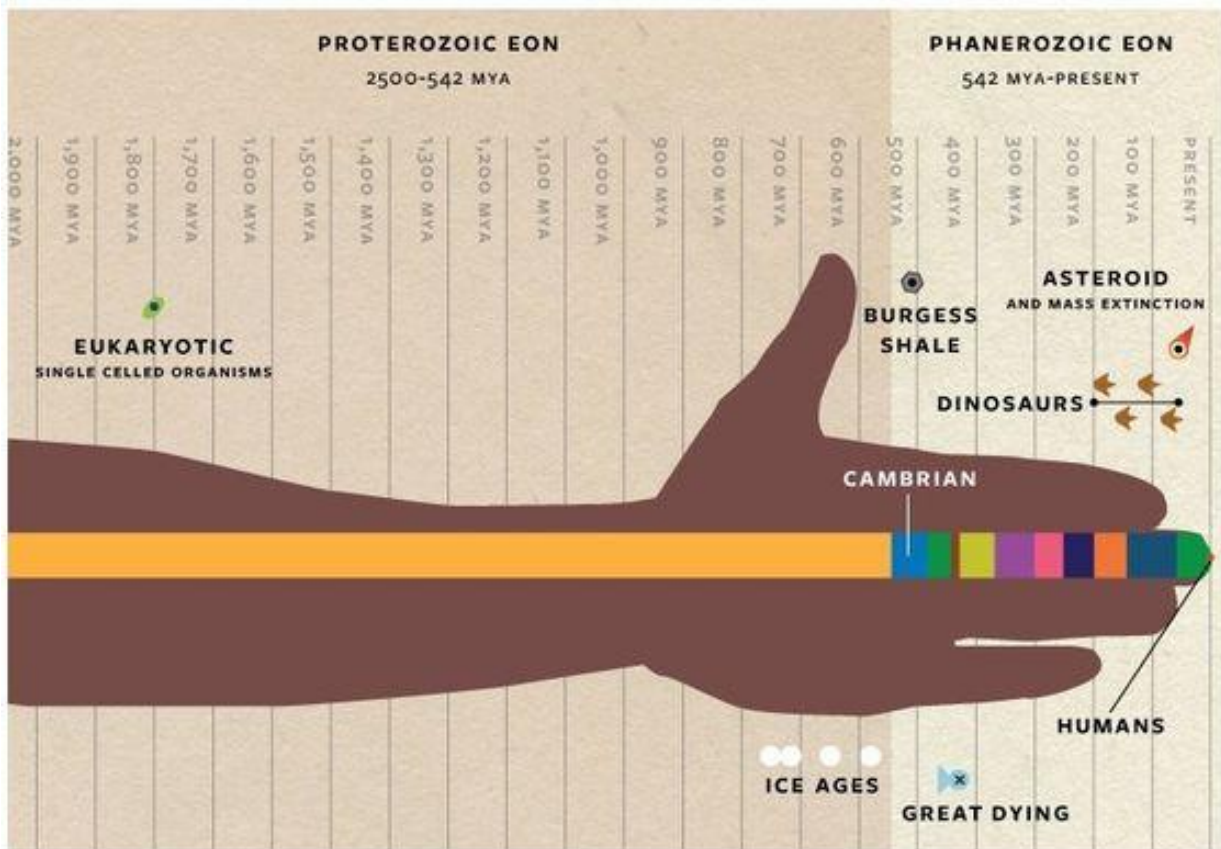
Welcome to our  
[#Anthropocene](#)

7:48 AM · Oct 2, 2020 · Twitter for iPhone

461 Retweets 40 Quote Tweets 729 Likes





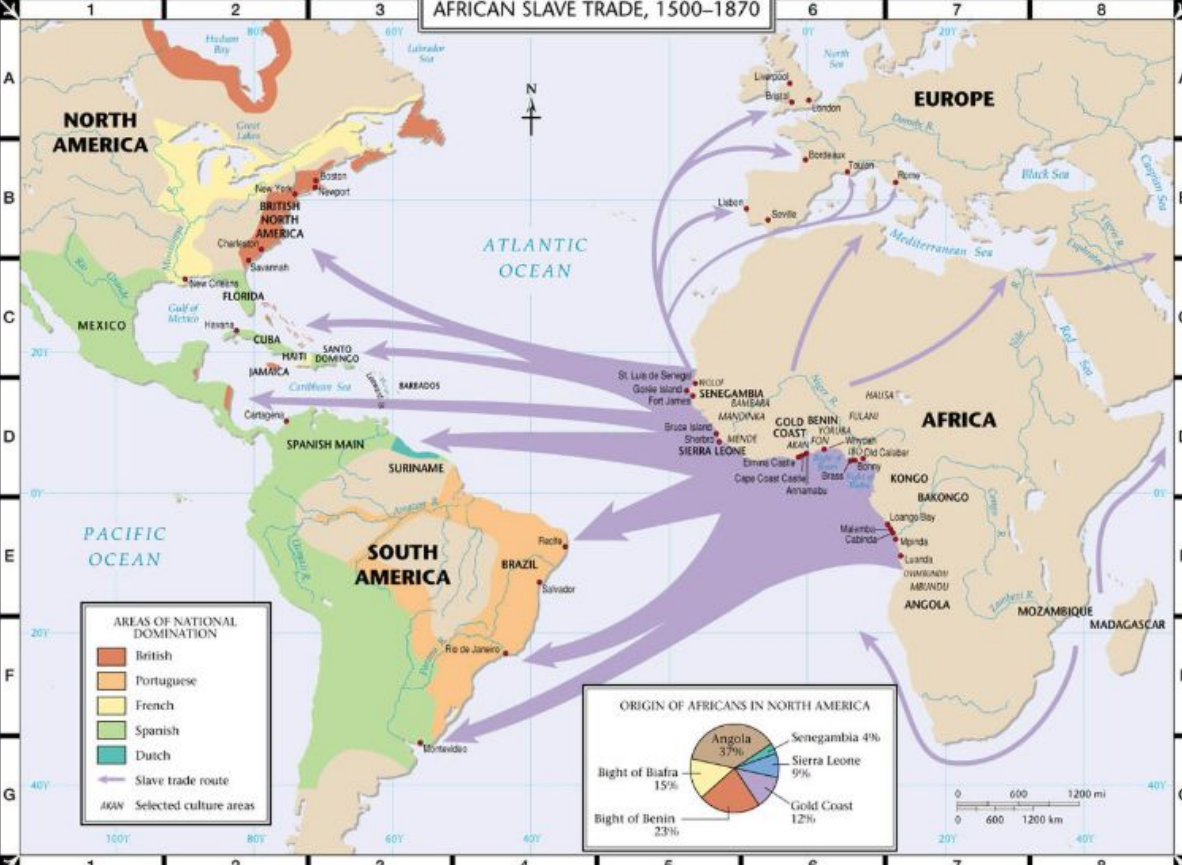


## 4.5 billion yrs of Earth History

Life on Earth 4000 Ma  
 Eukaryotics 1800 Ma  
 Complex life 550 Ma  
 Dinosaurs extinction 65 Ma  
 Upright apes 7 Ma  
 Homo sapiens 300,000 yrs  
 Burning fossil fuels 150 yrs  
 Humanity 'geological superpower'  
 7th mass extinction  
 Welcome to the  
[#Anthropocene](#)

**DEEP TIME:** If the timeline of Earth were mapped onto the human arm, it would begin around the shoulder where the earth formed about 4.6 billion years ago. Animals originated within the palm, but the myriad forms alive today exploded onto the scene around the first knuckle, in the Cambrian period. Blocks along the fingers represent the periods that followed, such as the Jurassic (dinosaurs!) and the Cenozoic (in which humans evolved, a microscopic sliver at the tip of a fingernail).

AFRICAN SLAVE TRADE, 1500-1870



Professor Mark Maslin  
@ProfMarkMaslin

The roots of modern racism lie in European colonisation and mass slavery 🧬. It also started the human dominance of the planet & marks the beginning of #Anthropocene. The roots of racism and our planetary emergency share a common cause.

#BlackLivesMatter 🍌

[theconversation.com/why-the-anthro...](https://theconversation.com/why-the-anthro...)

3:09 PM · Jun 25, 2020 · Twitter Web App

52 Retweets 5 Quote Tweets 112 Likes



What's happening

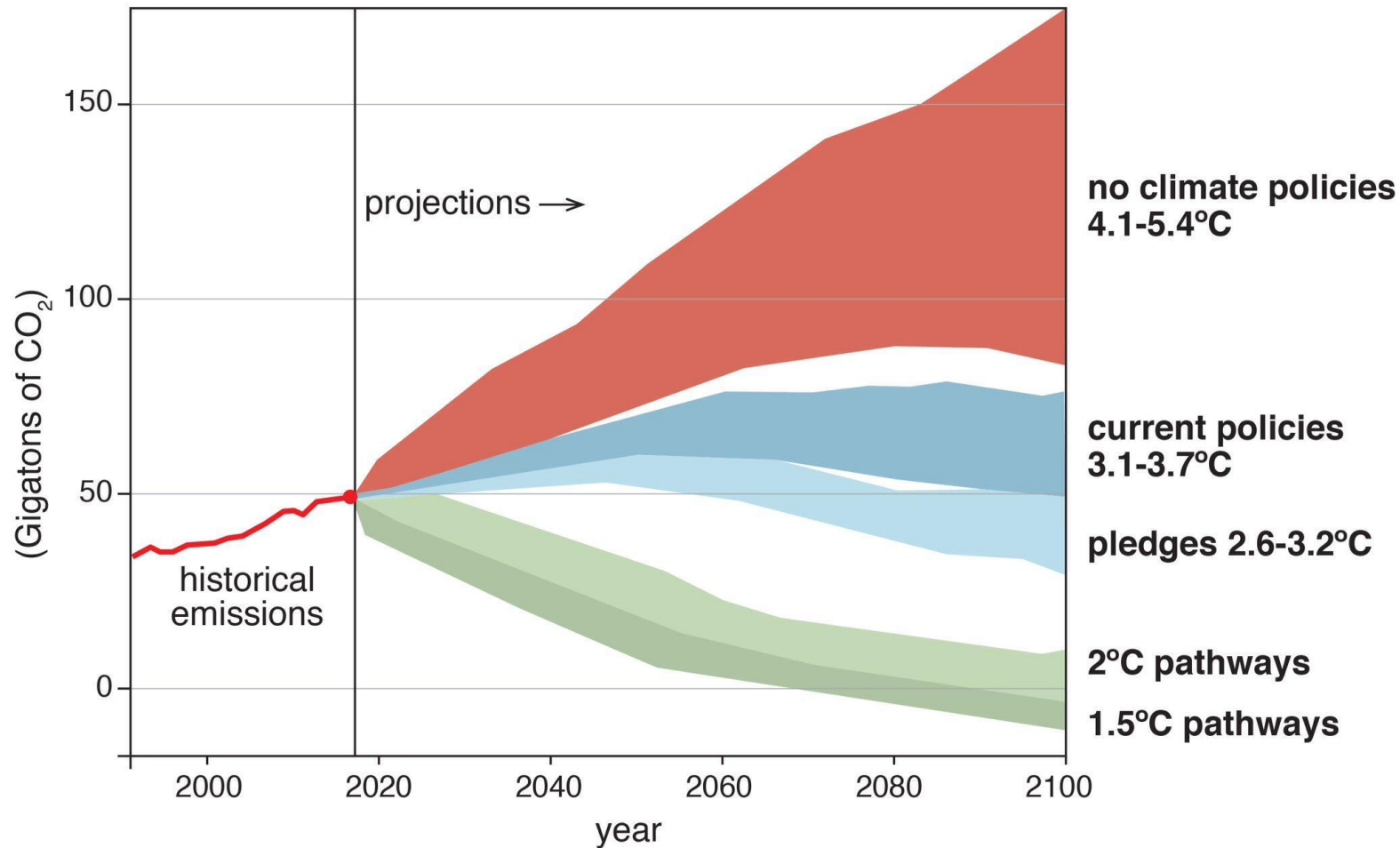
Donald and Melania Trump test positive for COVID-19

Help to save the planet by:

-  Talk about [#climatechange](#)
-  Switch to vegetarian or vegan diet
-  Switch to renewable energy
-  Reduce, reuse & recycle more
-  walk/cycle more
-  Use an electric/hybrid car
-  Stop flying
-  Divest pension from fossil fuels
-  Protest
-  Vote!

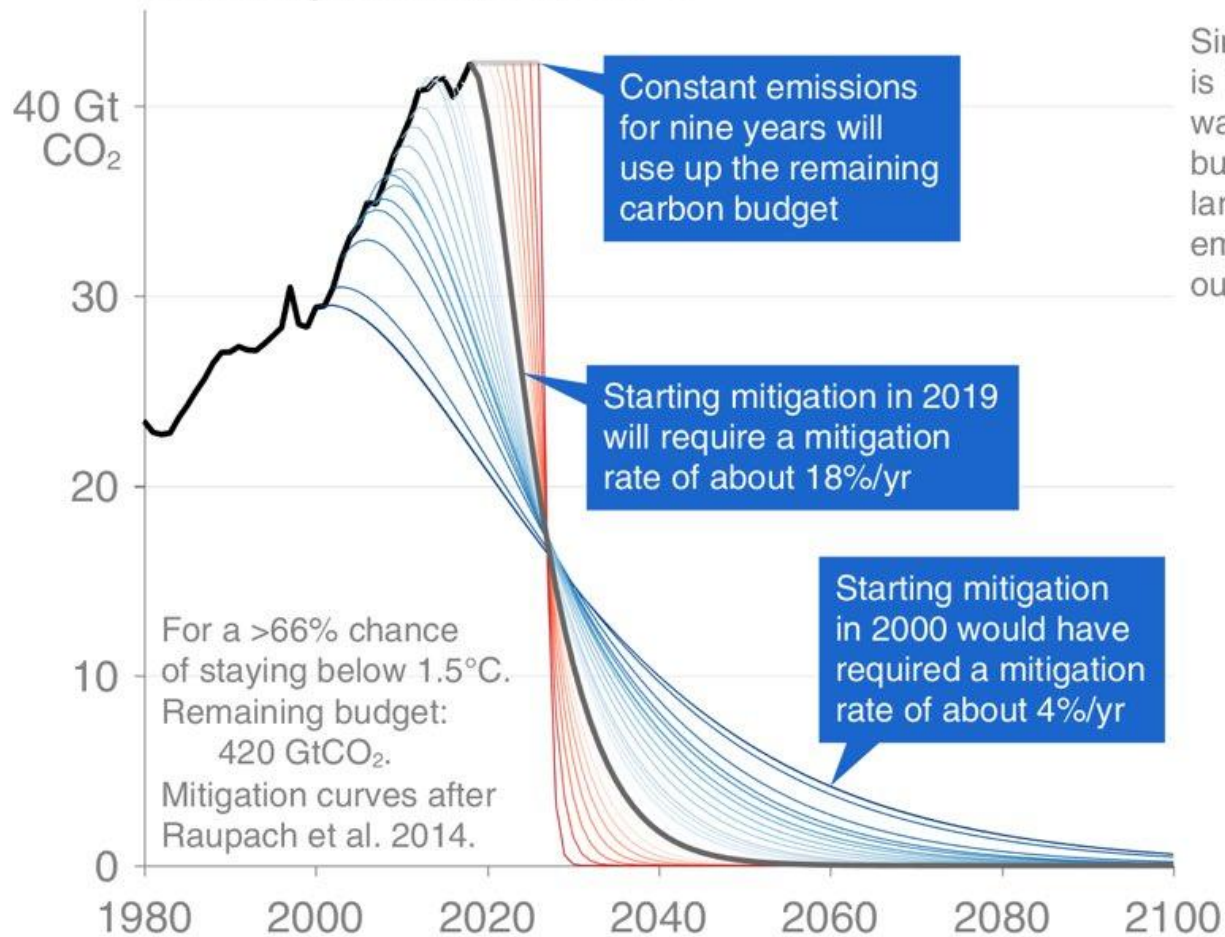
**Teach for the  
Anthropocene**

Past and future carbon emissions





## CO<sub>2</sub> mitigation curves: 1.5°C



Since 18%/yr mitigation is impossible, the only way to achieve this budget is with very large "negative" emissions: pulling CO<sub>2</sub> out of the atmosphere.



The science is clear.

We face an unprecedented  
global emergency.

We must teach for the  
Anthropocene.