

We need to talk

What is the situation of the global climate now?

What's the situation down the road?

What can we do?

Talk sections

What's the situation now?

- Temperature rise
- Examples of weather extremes
- Video of the Arctic
- On our way to tipping points

What are we going to face soon and further in the future?

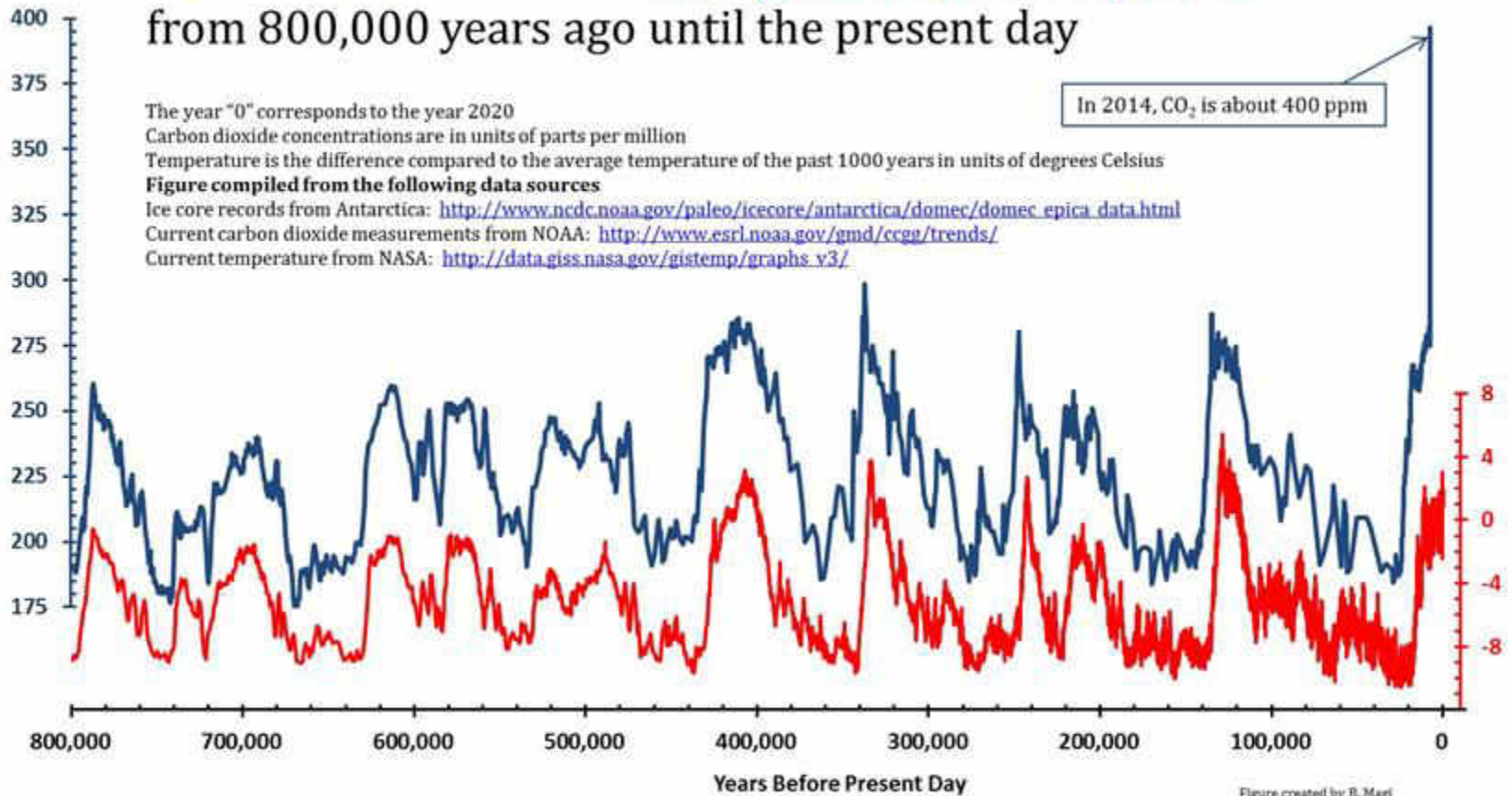
- Temperature prediction under business as usual
- Food, welfare state, conflicts, extinction
- Talk by Prof. Rockström

What can be done?

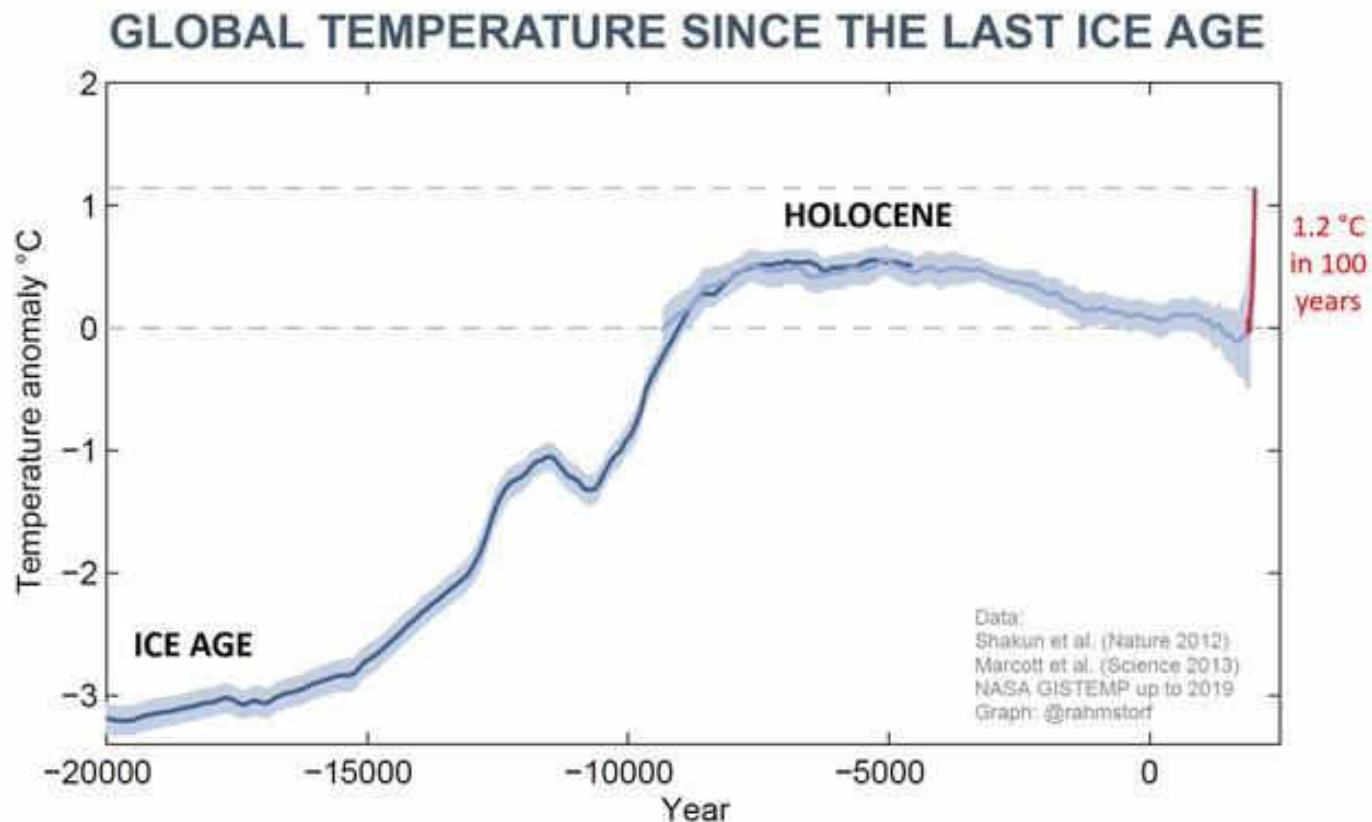
- Voting, demonstrations, petitions, civil disobedience
- In academia

Where are we now?

Carbon dioxide and the **temperature of our planet** from 800,000 years ago until the present day



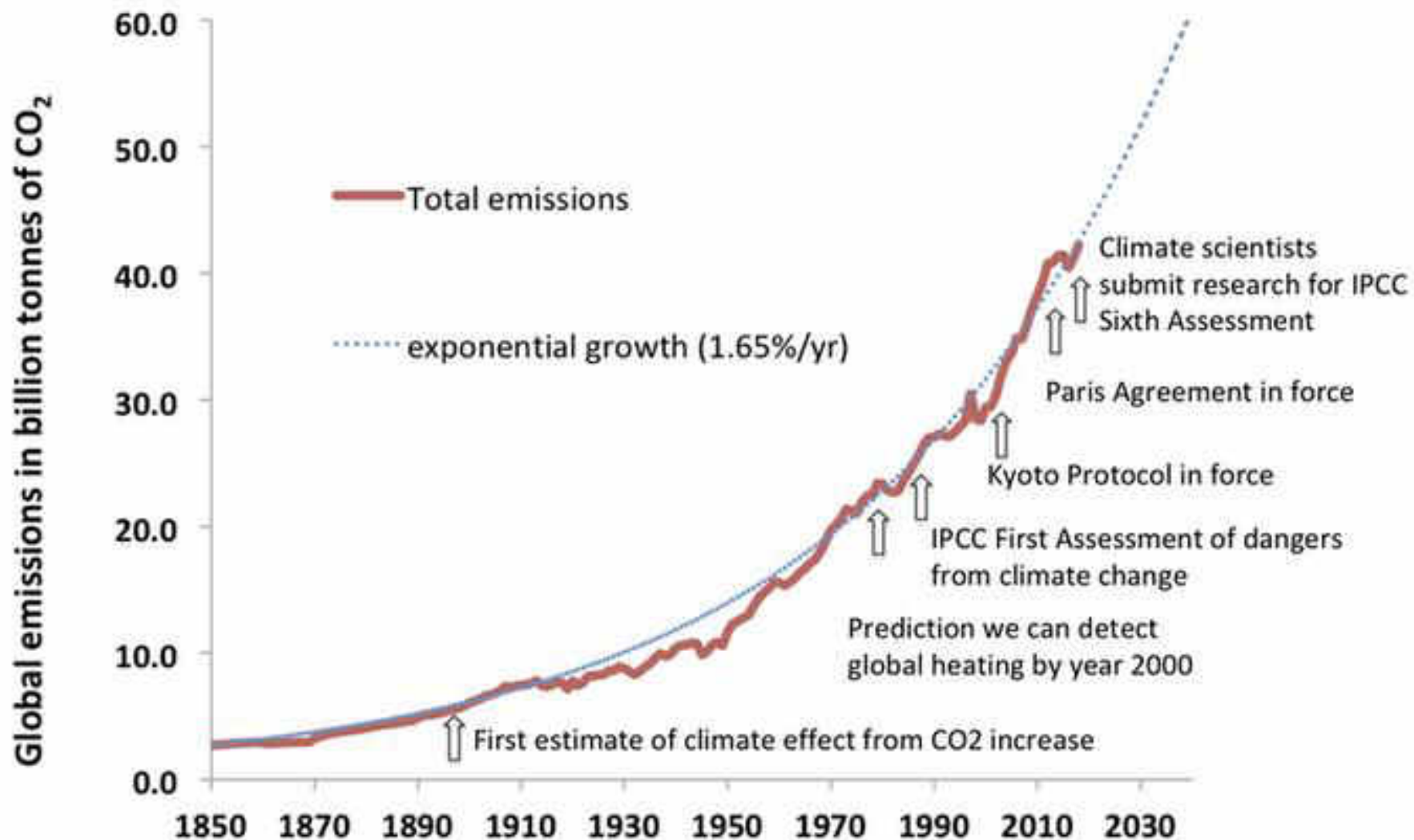
Where are we now?



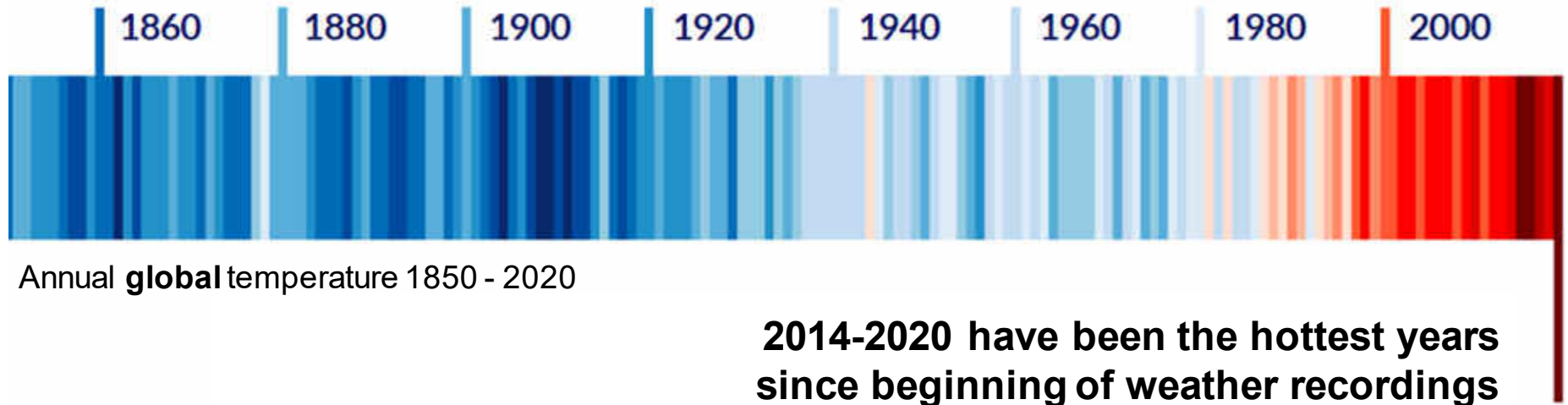
“In just 100 years, fossil fuel use has more than undone 5000 years of natural cooling. It's hotter now than any time in the history of human civilisation. We are catapulting ourselves out of the Holocene into uncharted territory. Current life on Earth is not adapted to this.”

(Prof. Stefan Rahmstorf, PIK)

Where are we now?

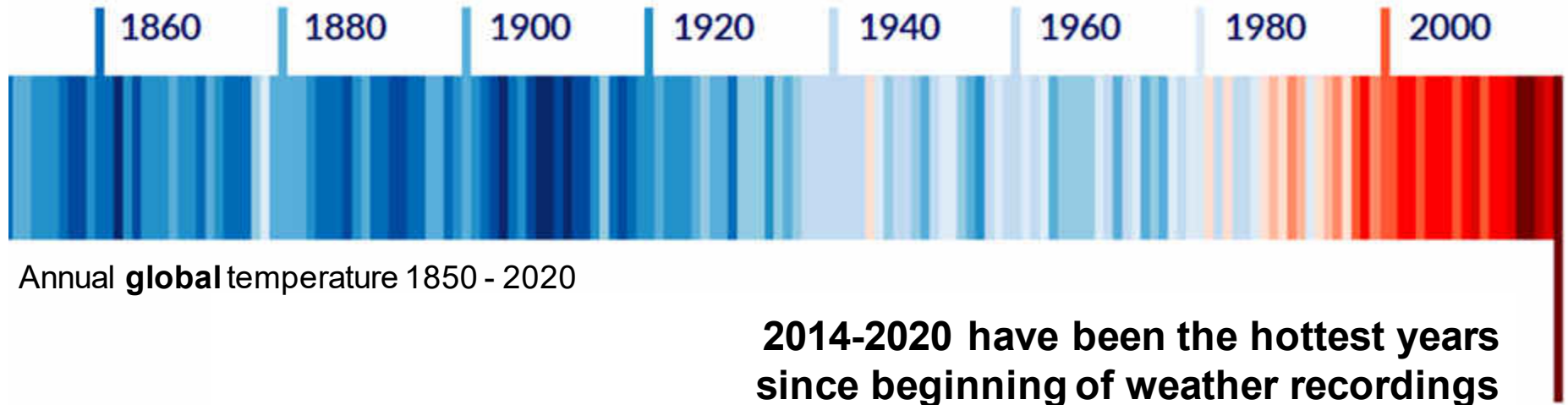


Where are we now?



The global average temperature is **+1.2°C** compared to preindustrial times.

Where are we now?



The global average temperature is **+1.2°C** compared to preindustrial times.

...so, we're talking about **AVERAGE**.

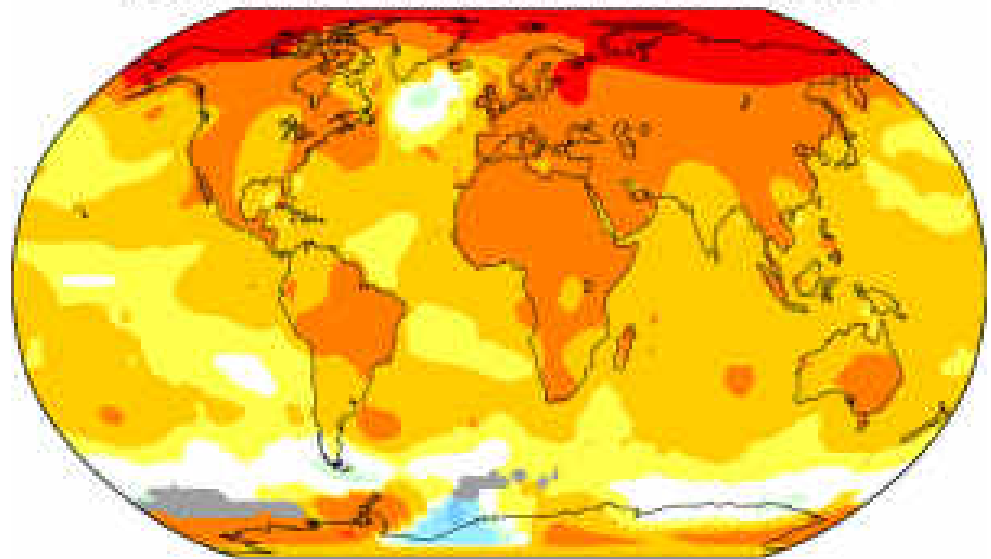
Where are we now?



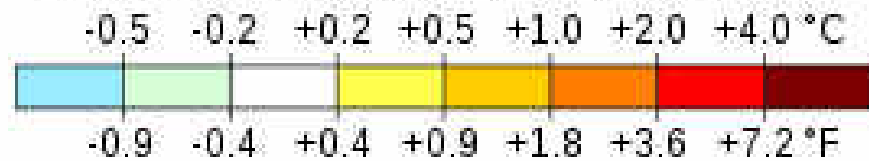
Where are we now?



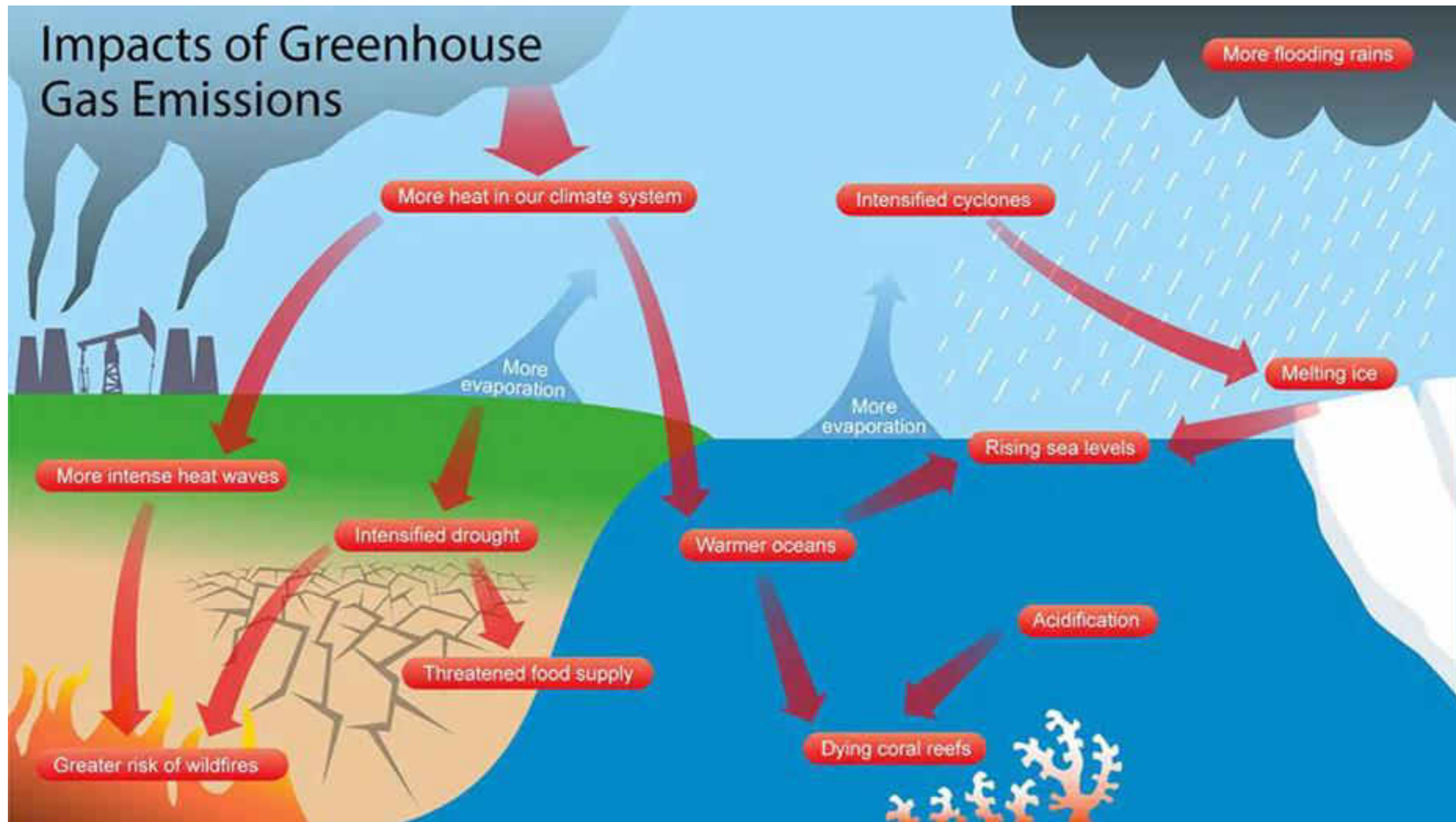
Temperature change in the last 50 years



2011-2020 average vs 1951-1980 baseline



Where are we now?

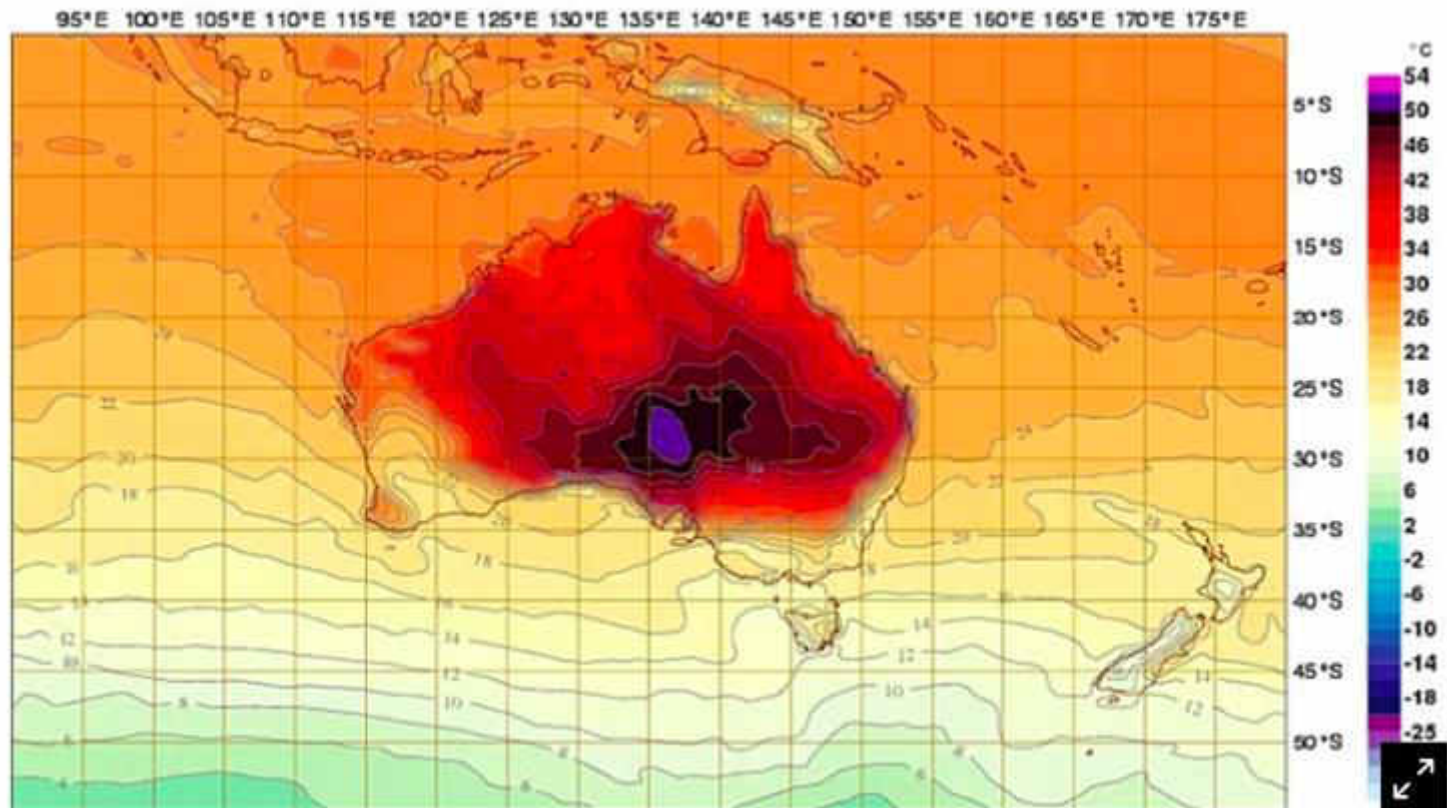


Where are we now?

Australia adds new colour to temperature maps as heat soars

Forecast temperatures are so extreme that the Bureau of Meteorology has had to add a new colour to its scale. It is a sign of things to come

(The Guardian, Tue 8 Jan 2013 11.34 GMT)



Deep purple ... the Bureau of Meteorology's interactive weather forecasting chart has added new colours.

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How one heatwave killed 'a third' of a bat species in Australia

By Frances Mao
BBC News, Sydney

© 15 January 2019

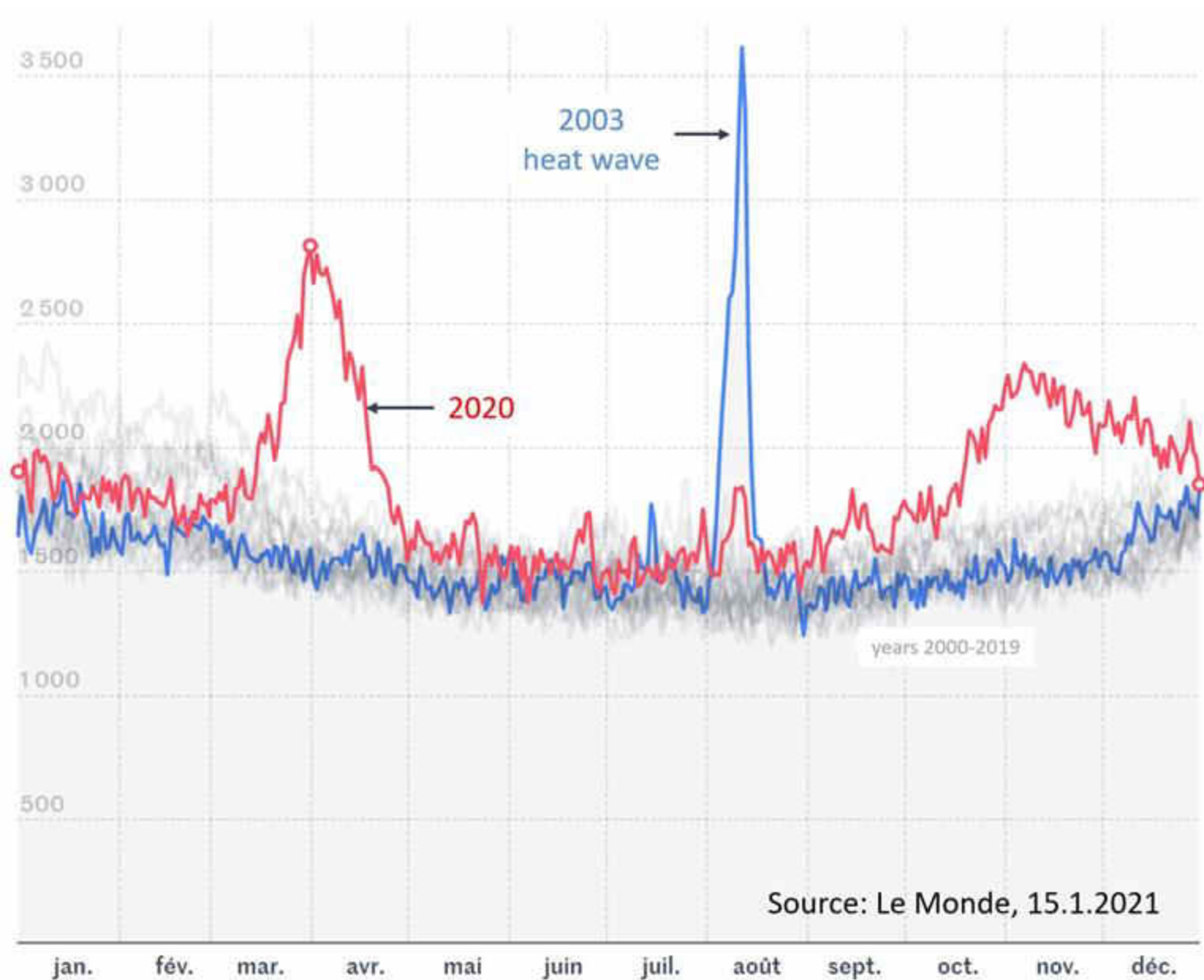
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☞ sulphur crested cockatoos falling from trees in Victoria. Picture: @westwills3_bill via Twitter

WEATHER

Birds falling 'dead' from trees in heat

Where are we now?



Where are we now?

Stronger storms mean new 'category six' scale may be needed

Traditional scale used goes only to five but strength and intensity of storms is increasing, says scientists

Jobs

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UK edition ▾

The Guardian

Thu 22 Feb 2018 04.13 GMT

SCIENTIFIC
AMERICAN®

Hurricane Dorian Was Worthy of a Category 6 Rating

The Category-1-to-5 Saffir-Simpson scale for rating hurricanes is inadequate

By Jeff Masters on October 3, 2019

Global ice loss accelerating at record rate, study finds

Rate of loss now in line with worst-case scenarios of the Intergovernmental Panel on Climate Change

My account

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The Guardian

UK edition

Mon 25 Jan 2021 09.00 GMT

<https://doi.org/10.5194/tc-15-233-2021>

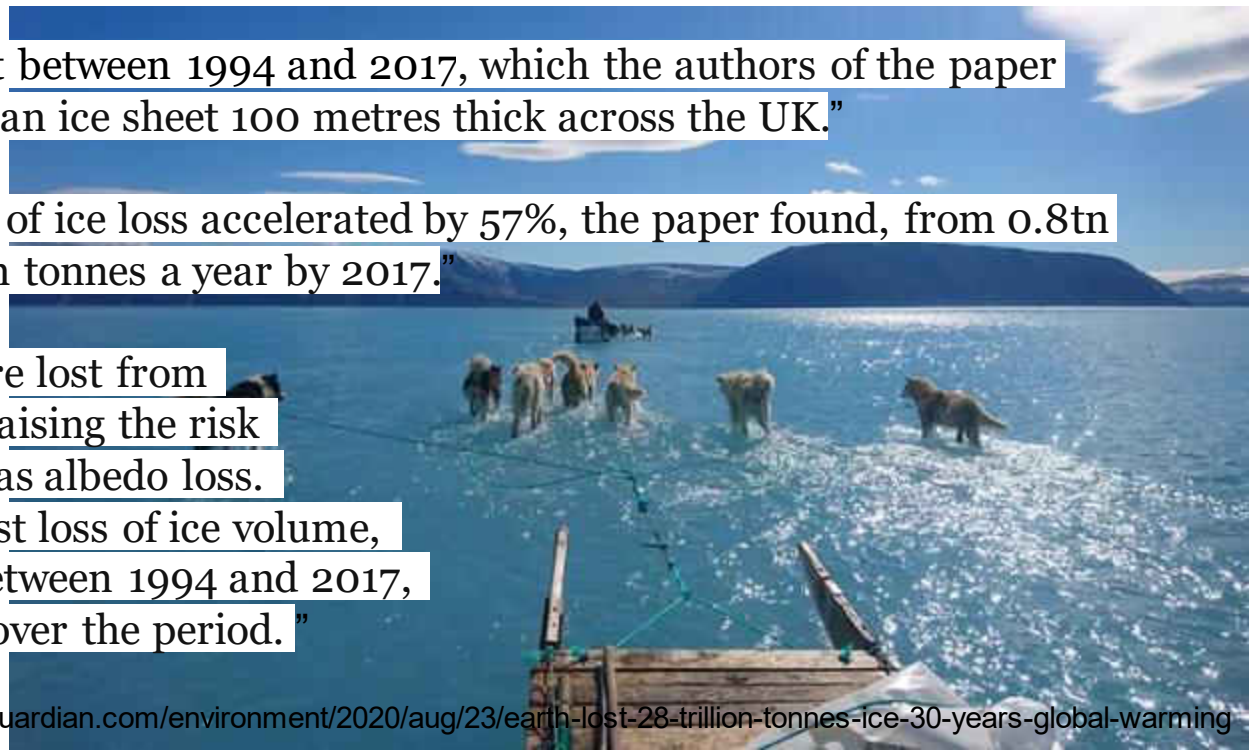
“The melting of ice across the planet is accelerating at a record rate, with the melting of the Greenland and Antarctic ice sheets speeding up the fastest, research has found.”

“About 28tn tonnes of ice was lost between 1994 and 2017, which the authors of the paper calculate would be enough to put an ice sheet 100 metres thick across the UK.”

“Over the period studied, the rate of ice loss accelerated by 57%, the paper found, from 0.8tn tonnes a year in the 1990s to 1.2tn tonnes a year by 2017.”

“The greatest quantities of ice were lost from floating ice in the polar regions, raising the risk of a feedback mechanism known as albedo loss.

... Glaciers showed the next biggest loss of ice volume, with more than 6tn tonnes lost between 1994 and 2017, about a quarter of global ice loss over the period.”





NETFLIX

OUR PLANET

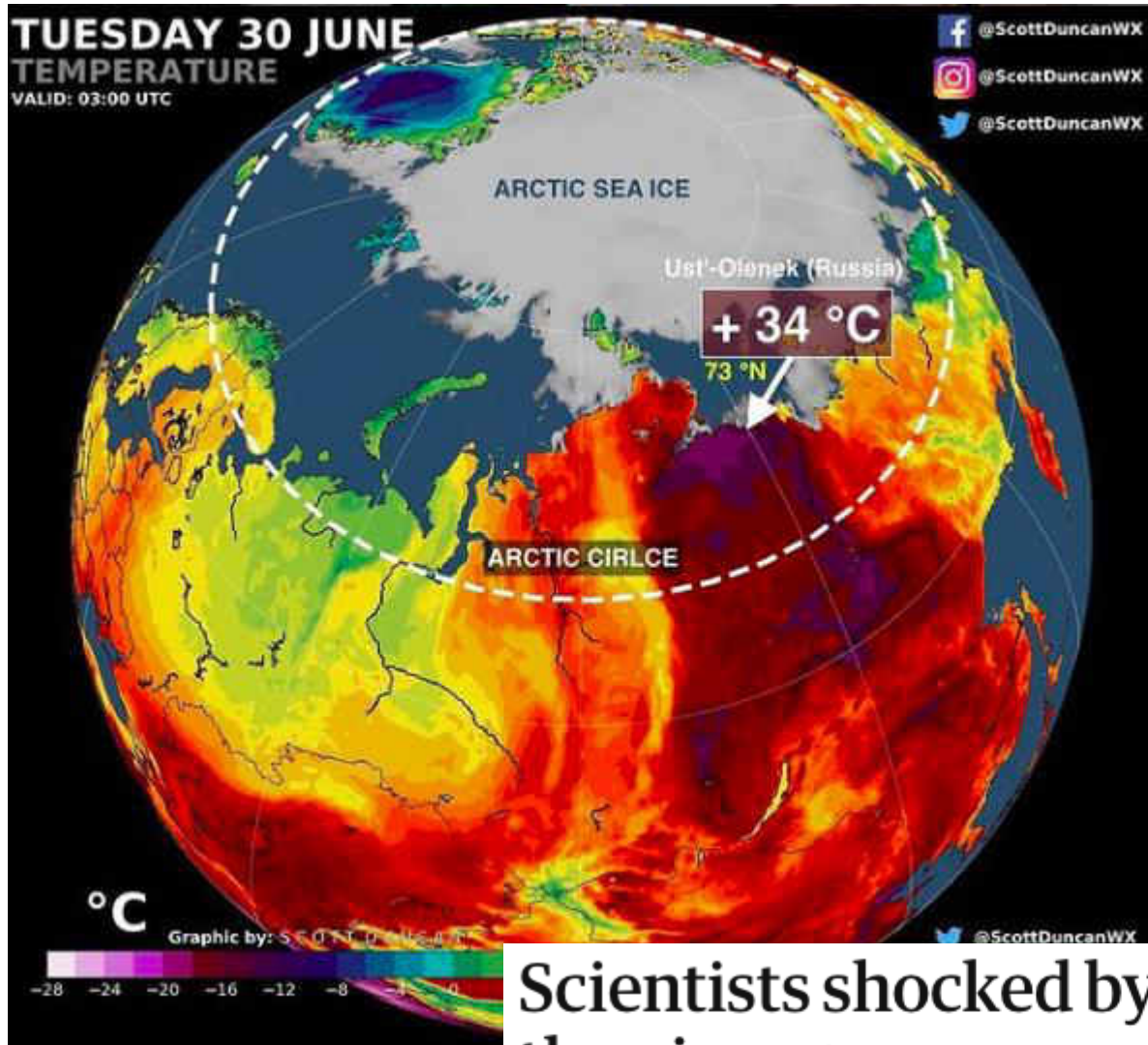
| FULL
EPISODE

“Animals are more than ever a test of our character, of mankind's capacity for empathy and for decent, honorable conduct and faithful stewardship. We are called to treat them with kindness, not because they have rights or power or some claim to equality, but in a sense because they don't; because they all stand unequal and powerless before us.”

— Matthew Scully, [Dominion: The Power of Man, the Suffering of Animals, and the Call to Mercy](#)

TUESDAY 30 JUNE
TEMPERATURE
VALID: 03:00 UTC

f @ScottDuncanWX
i @ScottDuncanWX
t @ScottDuncanWX



Search **The Guardian** UK edition v

Scientists shocked by Arctic permafrost thawing 70 years sooner than predicted

- Ice blocks frozen solid for thousands of years destabilized
- 'The climate is now warmer than at any time in last 5,000 years'

Tue 18 Jun 2019 17:02 BST

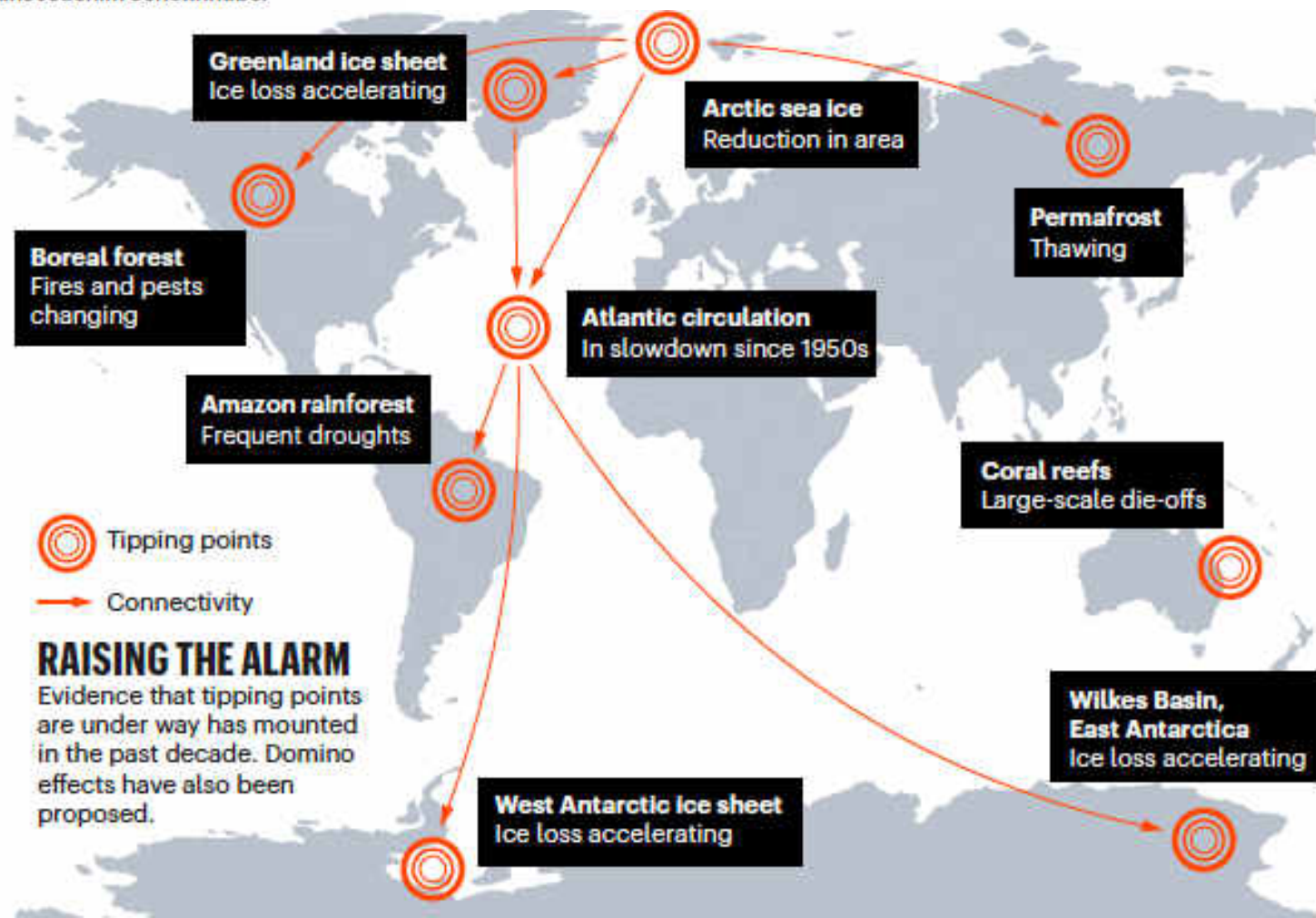
What can we expect?

Climate tipping points – too risky to bet against

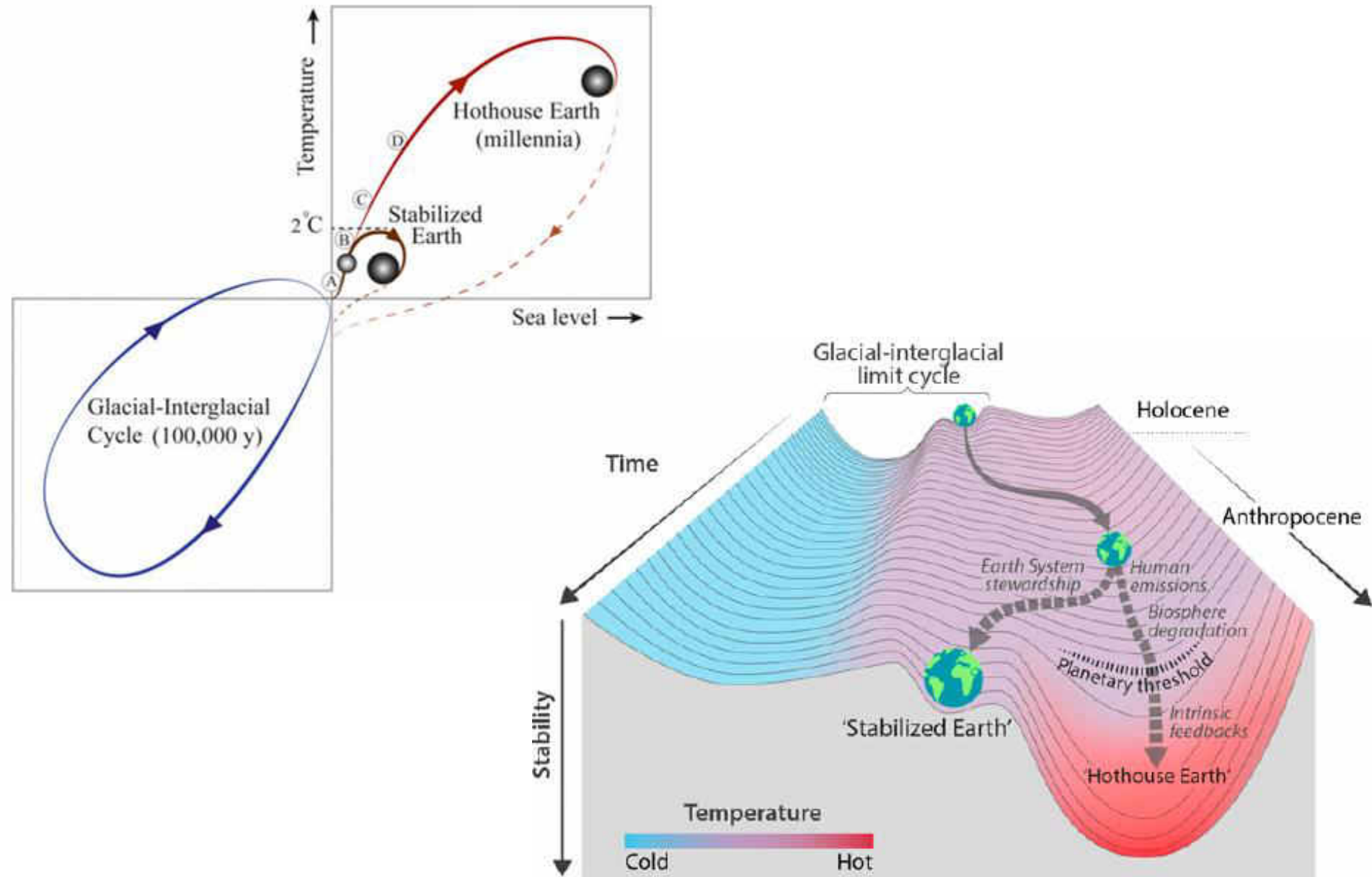
Timothy M. Lenton, Johan Rockström, Owen Gaffney, Stefan Rahmstorf, Katherine Richardson, Will Steffen & Hans Joachim Schellnhuber

nature

PMID: 31776487



What can we expect?



What can we expect?

1.5°C and 2°C Warmer Worlds

The global climate has changed relative to the pre-industrial period, and there are multiple lines of evidence that these changes have had impacts on organisms and ecosystems, as well as on human systems and well-being (high confidence). The increase in global mean surface temperature

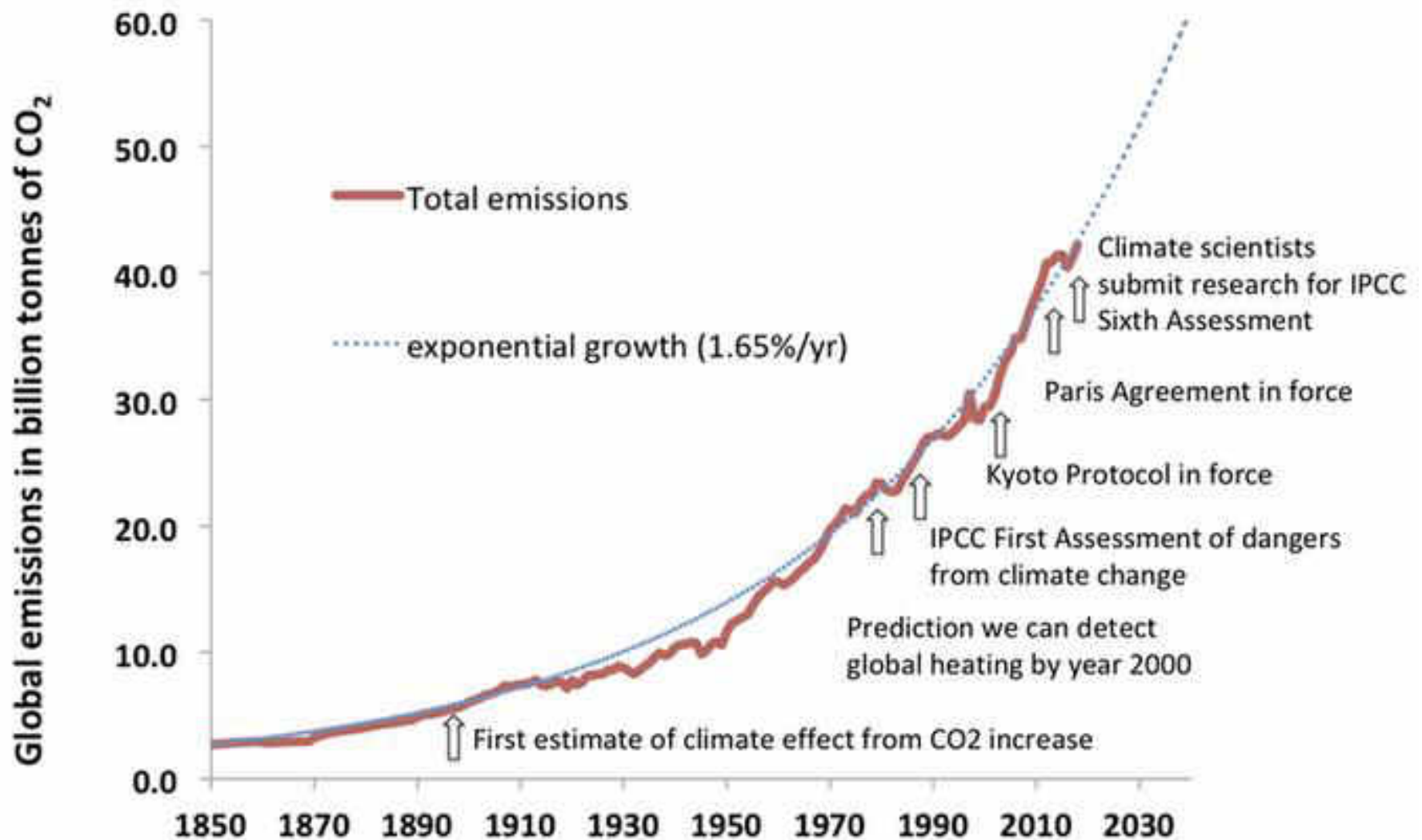
global emissions of CO₂ must start bending in 2020 and be

cut globally by half in the coming ten years (until 2030)

net zero by 2050

to have a reasonable chance of staying well below 2°C of global warming (compared to pre-industrial global mean temperature) (IPCC, 2018) (SR1.5) .

What can we expect?



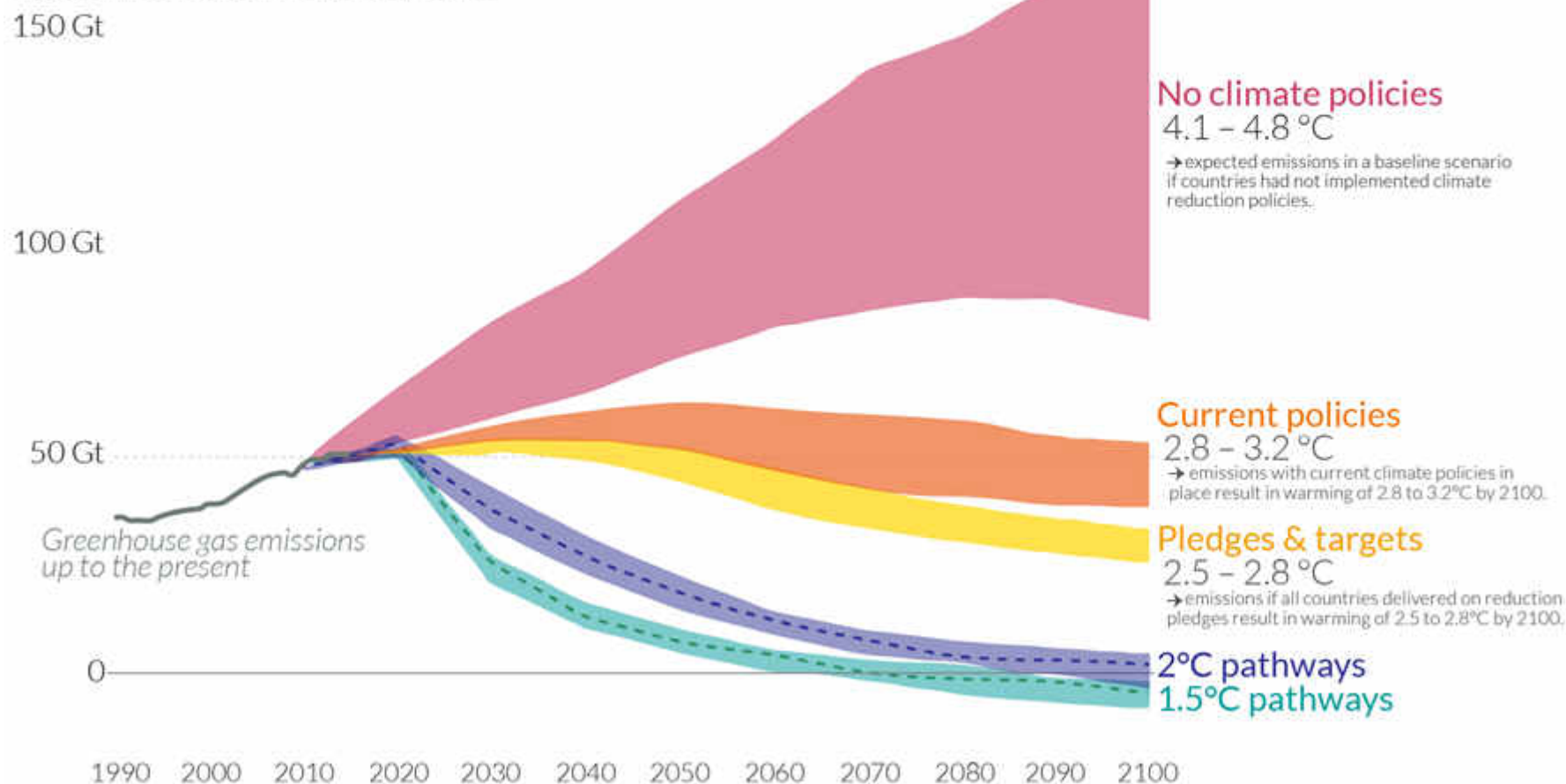
What can we expect?

Global greenhouse gas emissions and warming scenarios

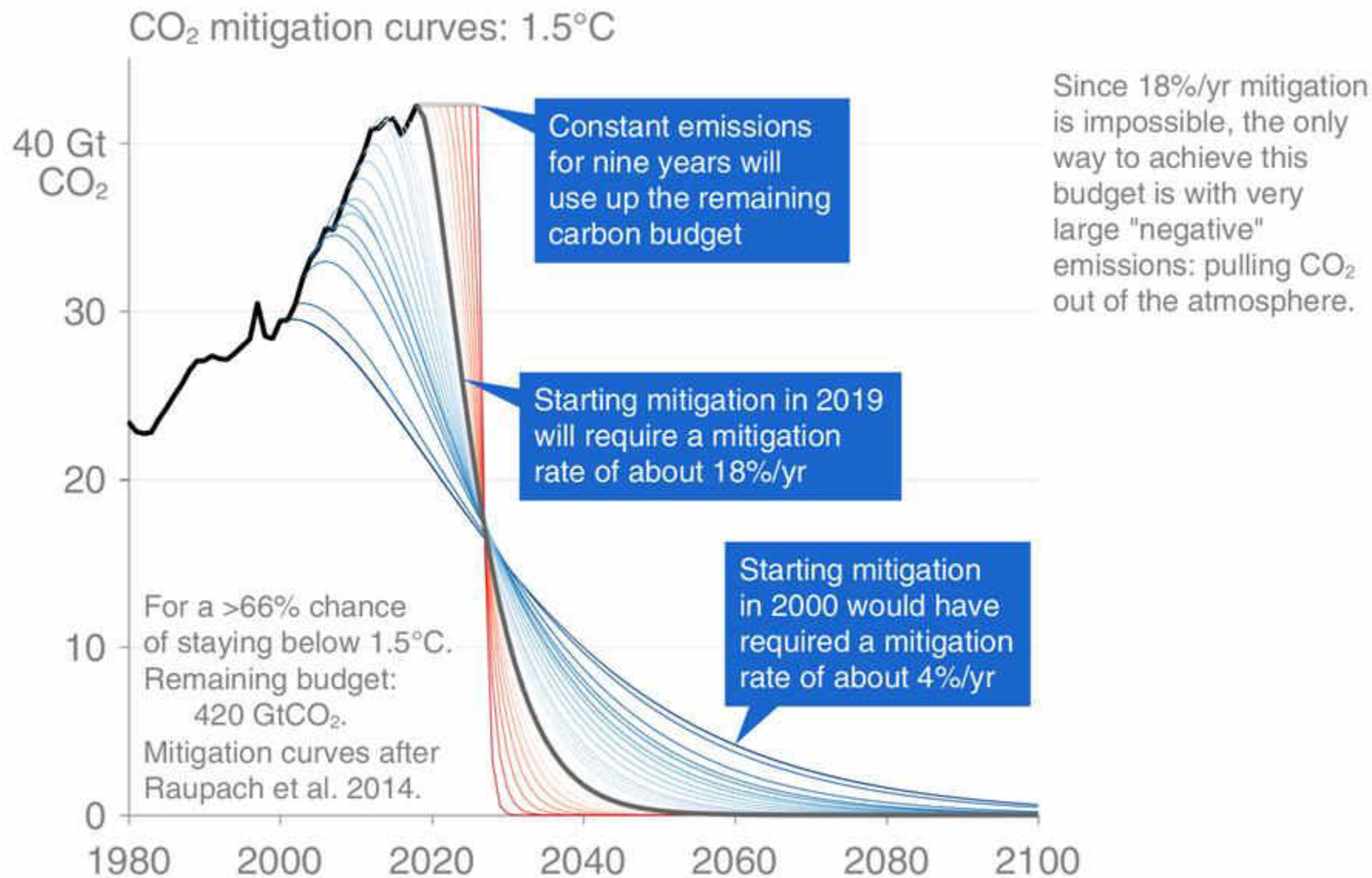
Our World
in Data

- Each pathway comes with uncertainty, marked by the shading from low to high emissions under each scenario.
- Warming refers to the expected global temperature rise by 2100, relative to pre-industrial temperatures.

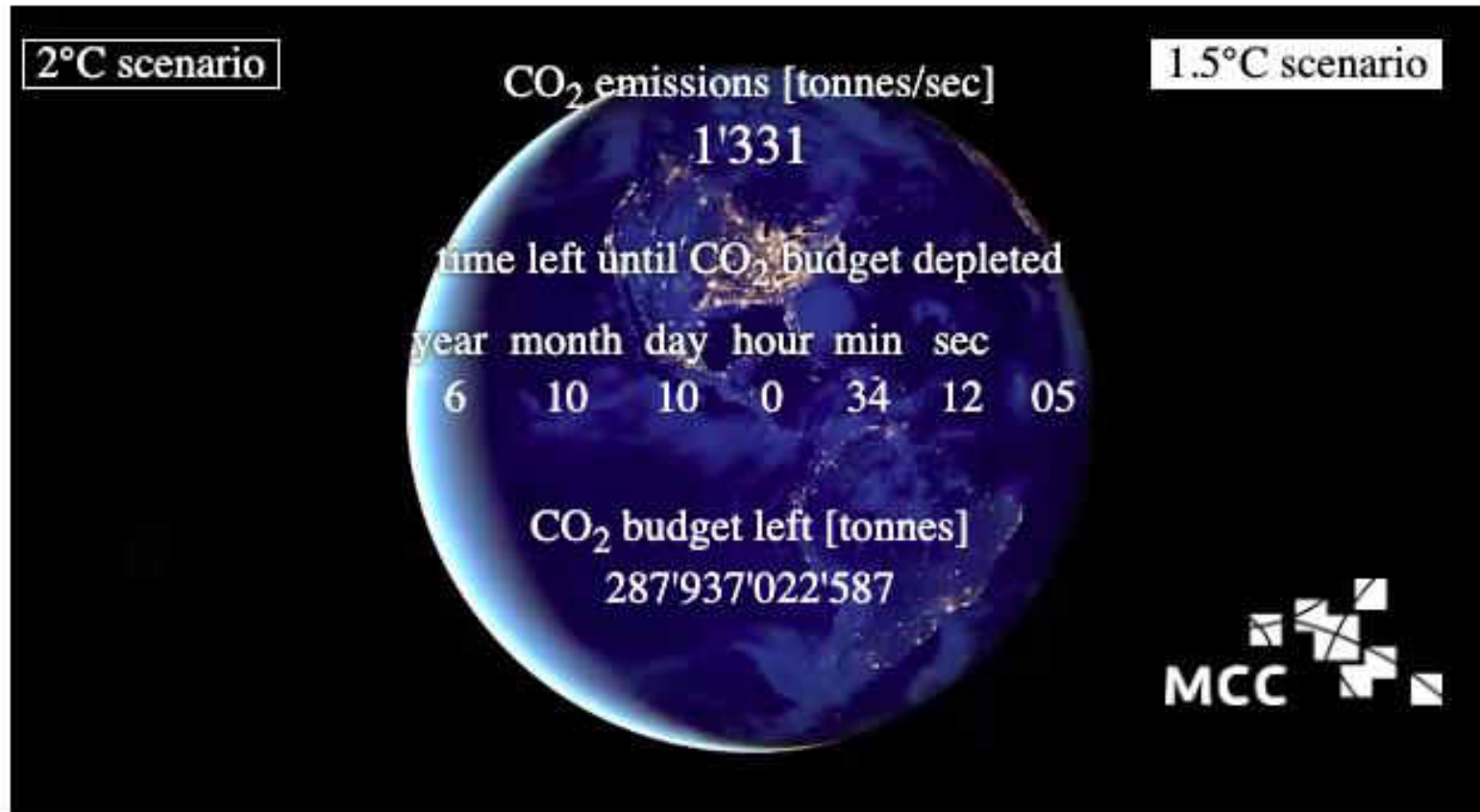
Annual global greenhouse gas emissions
in gigatonnes of carbon dioxide-equivalents



What can we expect?



What can we expect?



22nd Feb 2021

The difference between 1.5 and 2°C

“And at 2 degrees, we start getting into scenarios that make most dystopian horror movies look like children’s coloring books.”

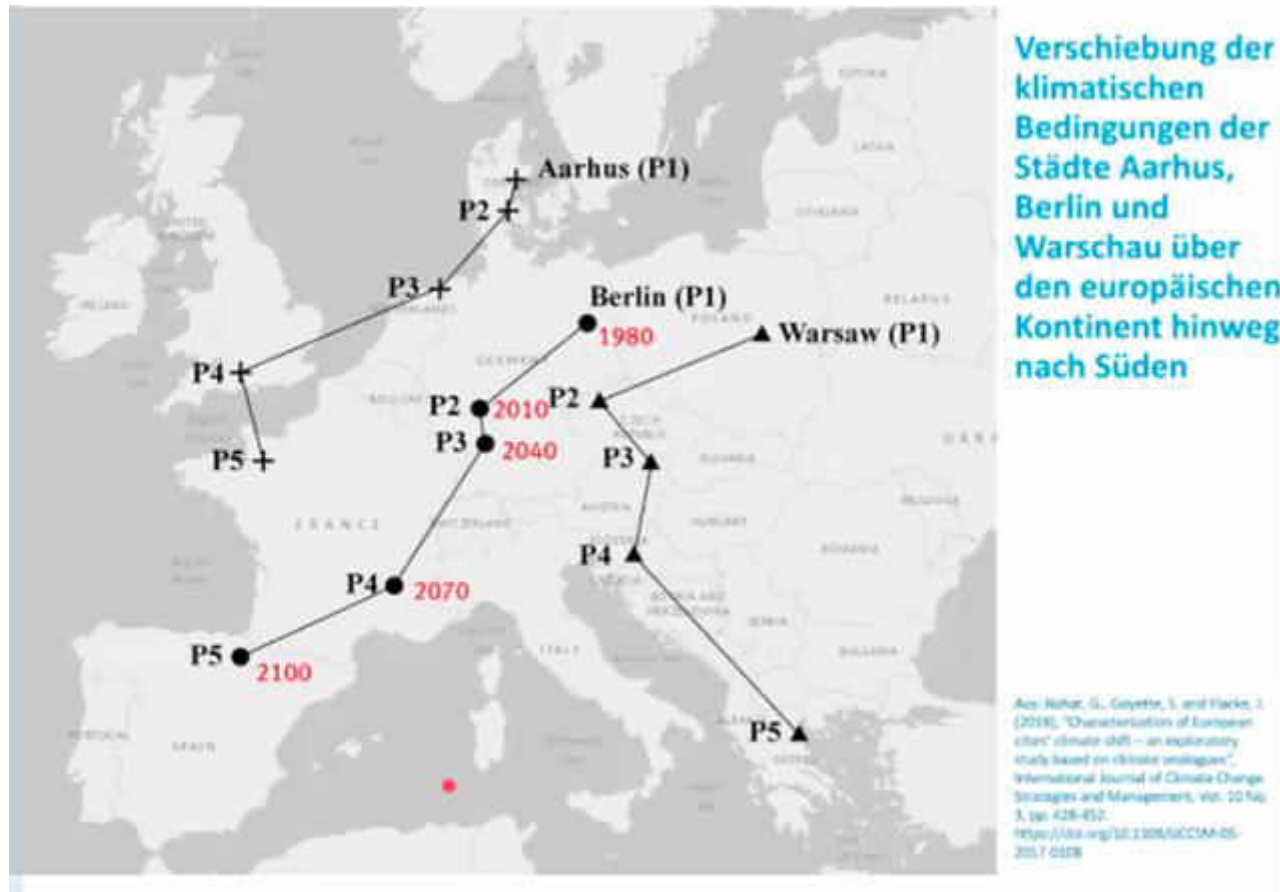
- 1.7 billion more people experience severe heat waves at least once every five years.
- Seas rise – on average – another 10 centimeters (almost 4 inches),.
- Up to several hundred million more people become exposed to climate-related risks and poverty.
- The coral reefs that support marine environments around the world could decline as much as 99 percent.
- Global fishery catches could decline by another 1.5 million tonnes.

“Bottom line: Going above 1.5 degrees of warming puts millions more at risk of potentially life-threatening heatwaves and poverty. It all but wipes out coral reefs that entire ecosystems rely on worldwide. Seas swallow even more of our cities. And that’s just for starters.”



<https://www.youtube.com/watch?v=4SC9EAdOQIs>

What can we expect?



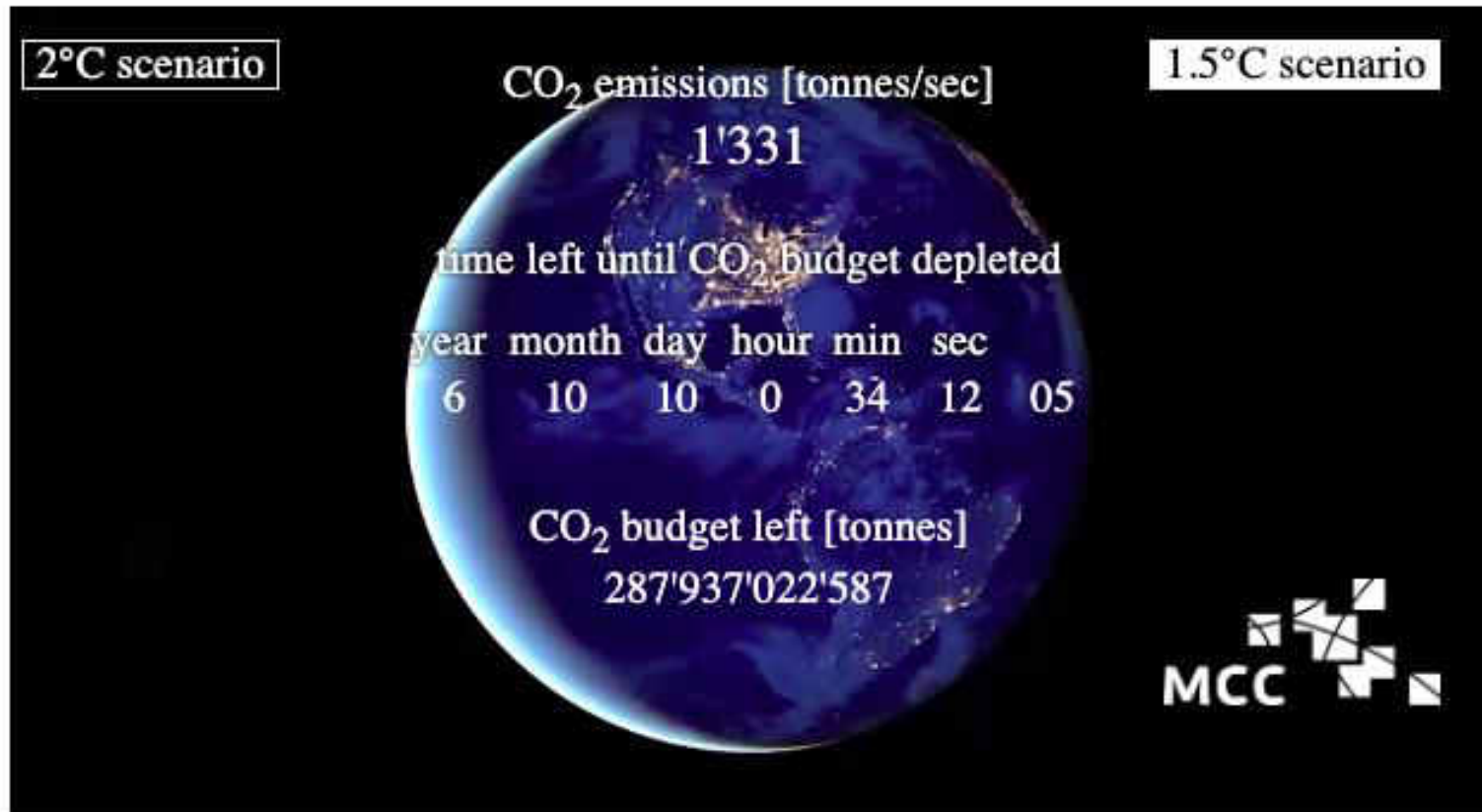


What can we do?

So, what can WE do?

What can we do?

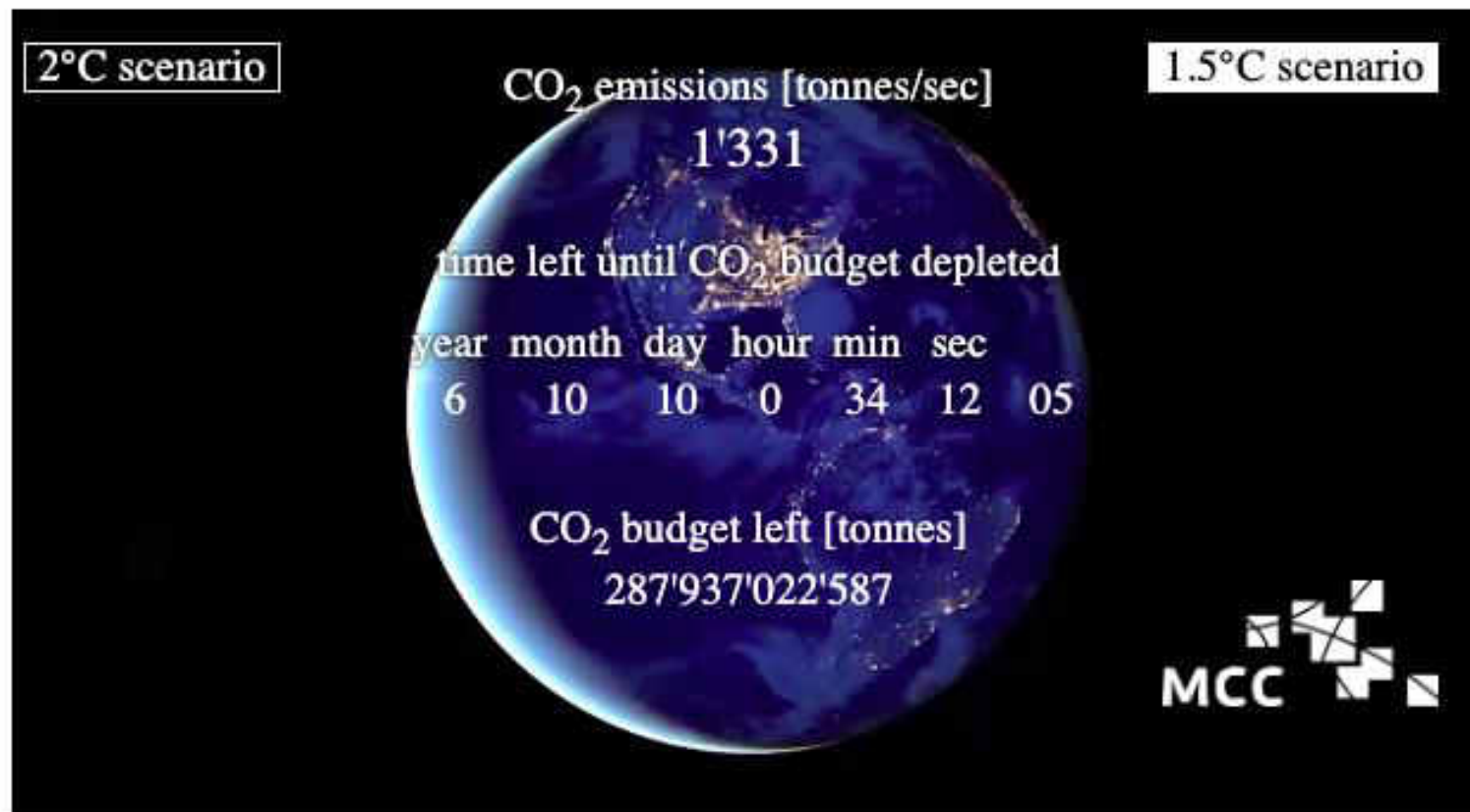
The timeframe for significant change is extremely small.



22nd Feb 2021

What can we do?

The timeframe for significant change is extremely small.



22nd Feb 2021

**We have to get priorities straight!
... on what to spend time and energy.**

What can we do?

PhD project/thesis: Average time according to subject

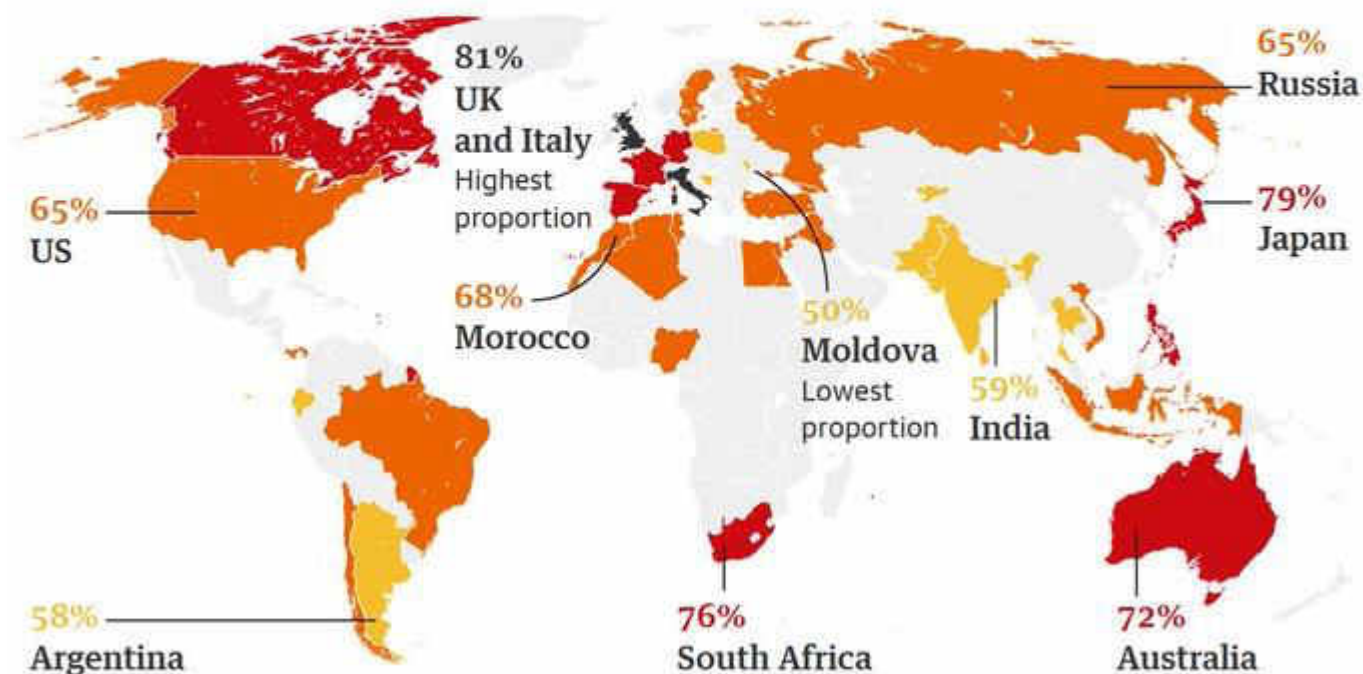
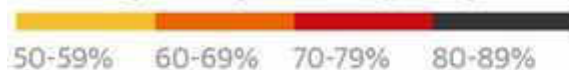
Fachbereich	Durchschnittliche Promotionsdauer
Mathematik/Naturwissenschaften	4,3 Jahre
Erziehungswissenschaften/Psychologie	4,3 Jahre
Rechts-, Wirtschafts- und Sozialwissenschaften	4,6 Jahre
Ingenieurwissenschaften	5 Jahre
Geisteswissenschaften	5,1 Jahre

Quelle: Studie "Promotionen im Fokus"; © academics

What can we do?

Two-thirds of people around the world said climate change is a global emergency

Percentage of respondents agreeing that there is a climate emergency



Guardian graphic. Source: UNDP



Voting

Petitions

Demonstrations

Activism

“There is ample evidence of strong responses, solutions and actions. Unfortunately, they are all too often islands of success in an ocean of indifference at best and of resistance and ignorance at worst.”

Johan Rockström, Nicholas Stern
(Standing up for a Sustainable World:
Voices of Change)

What can we do?

Voting

Petitions

Demonstrations

Activism



<https://www.instagram.com/p/CDZ9bn4nB-n/>

https://www.instagram.com/p/BViCi_bFmkQ/

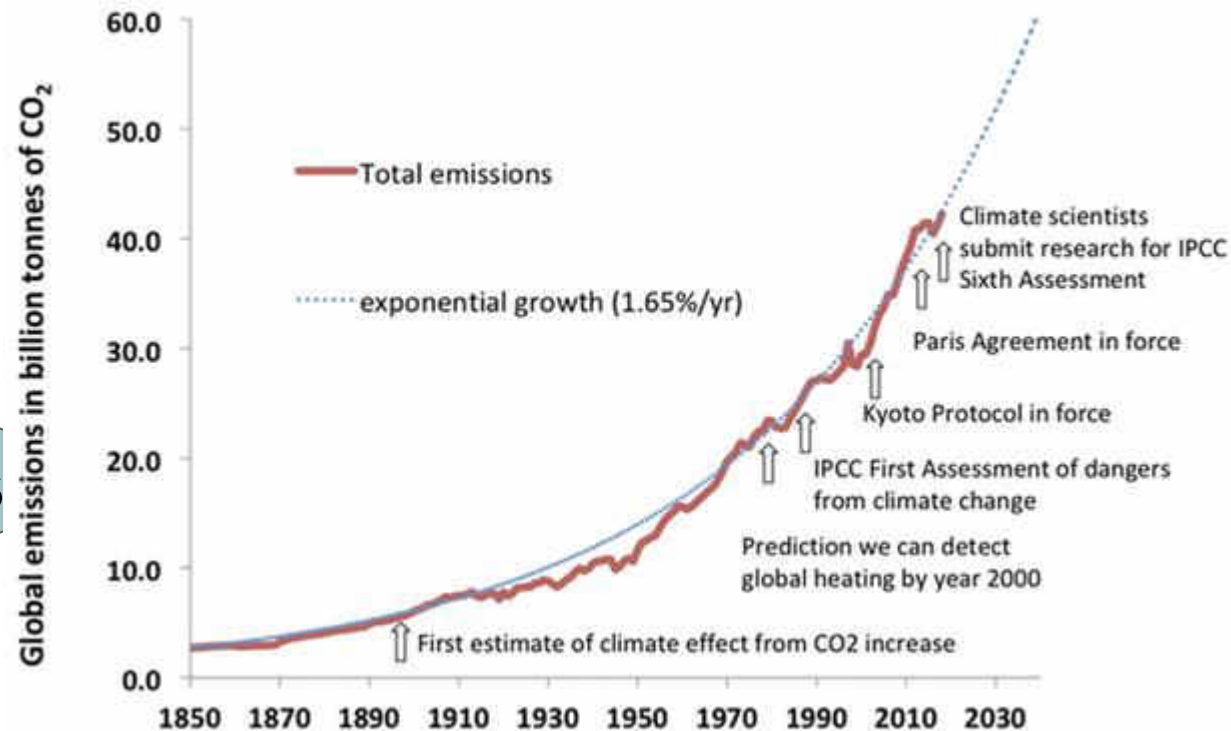
What can we do?

Voting

Petitions

Demonstrations

Activism



What can we do?



POWER TO THE PEOPLE

Nations are turning to citizen assemblies to weigh up climate policies

What can we do?



<https://www.youtube.com/watch?v=2yBkKwjy8Do&list=PL5J1RWtZjjiU3oEwKkiMOWDx7WavueKgk&index=10&t=739s>

What can we do?



Scientists for Future
Deutschland



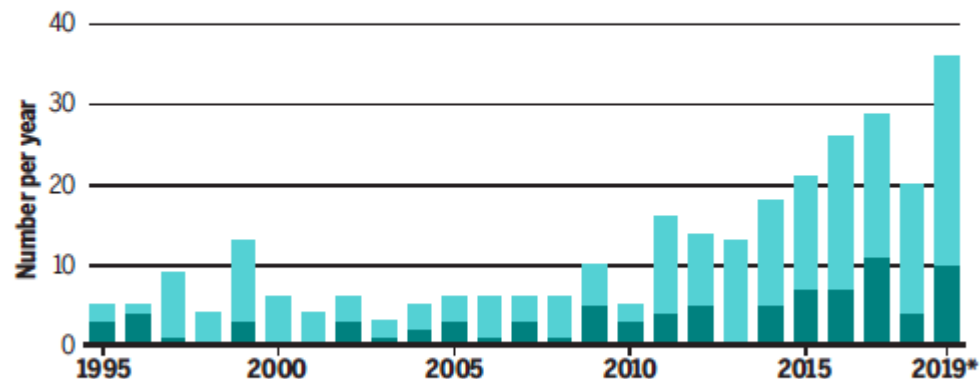
BÜRGERRAT
Deutschlands Rolle
in der Welt

**Scientists for Future empfiehlt eine
repräsentative Klima-
Bürger:innenversammlung im Jahr 2021**

Deliberative surge

The number of national and local minipublics—randomly selected assemblies that deliberate over policy recommendations—has risen in the past decade. Many dealt with scientific questions.

● Science policy** ● Other policy

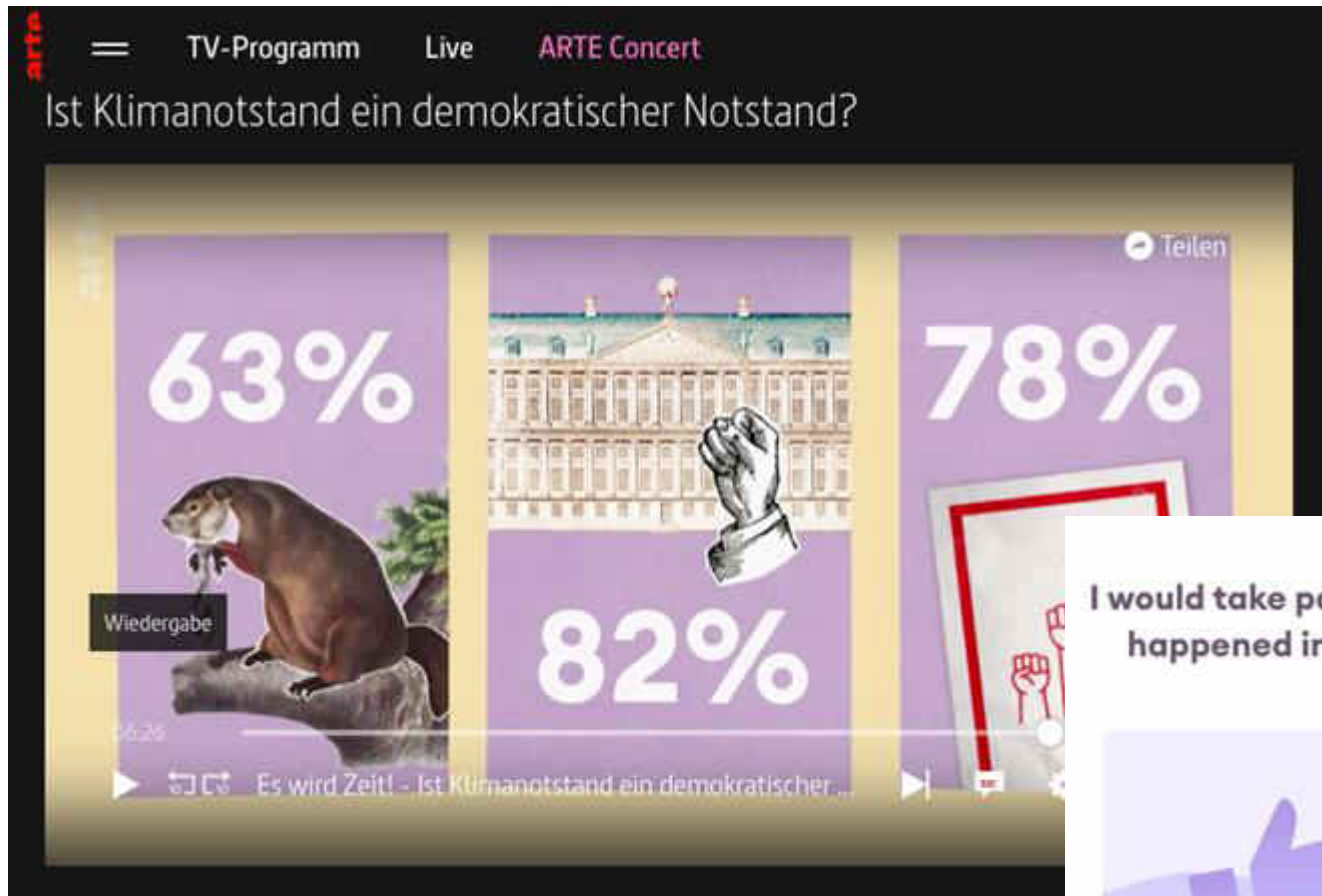


*The Organisation for Economic Co-operation and Development tallied minipublics through November 2019;

Science assembled data for the rest of 2019.

**Dealt with questions on climate, environment, health, biotechnology, neuroscience, research priorities, or food technology.

What can we do?



Arte.tv has asked 400 000 people about their views on the future.



<https://www.arte.tv/de/videos/093802-004-A/es-wird-zeit/>
<https://www.time-to-question.com/en/results>

What can we do?



<https://www.youtube.com/watch?v=2yBkKwjy8Do&list=PL5J1RWtZjjiU3oEwKkiMOWDx7WavueKgk&index=10&t=739s>

What can we do?



Sharp, 2003, There Are Realistic Alternatives, The Albert Einstein Institution – <https://www.aeinstein.org/wp-content/uploads/2013/09/TARA.pdf>

Stephan & Chenoweth, 2008, Why Civil Resistance Works, The Strategic Logic of Nonviolent Conflict, *International Security*, 33, 1, 7 – https://www.belfercenter.org/sites/default/files/legacy/files/IS3301_pp007-044_Stephan_Chenoweth.pdf

Chenoweth, 2019, Women's Participation and The Fate Of Nonviolent Campaigns, One Earth Future Foundation – <https://dx.doi.org/10.18289/OEF.2019.041>

Chenoweth, 2020, Questions, Answers, and Some Cautionary Updates Regarding the 3.5% Rule, Carr Center for Human Rights Policy – https://carrcenter.hks.harvard.edu/files/cchr/files/CCDP_005.pdf

Chenoweth, 2020, The Future of Nonviolent Resistance, *Journal of Democracy*, 31, 3, 69 – <https://doi.org/10.1353/jod.2020.0046>

What can we do?

“It’s time to participate in non-violent political movements wherever possible, ... Civil disobedience is not only a moral choice, it is also the most powerful way of shaping world politics.”

Christiana Figueres (former UN climate chief)

“The activists of Extinction Rebellion are leading the way in confronting this immense challenge, with courage and integrity, an achievement of historic significance that must be amplified with urgency.”

Noam Chomsky (American linguist, philosopher, cognitive scientist, historian, social critic, and political activist)

What can we do?

“It’s not at all surprising that people in this urgent situation feel they have got to take non violent direct action. They’ve got to find a way of putting the case for the human race before those in power.”

Dr Rowan Williams (Archbishop Canterbury)

“I was slipping into despair before I went to D.C. I spent a year depressed about climate change and feeling I wasn’t doing enough,” Fonda tells USA TODAY.
“Once I went to D.C. and began that action, my despondency disappeared.”

Jane Fonda (Actress and activist)

What can we do?

**“IF YOU'RE LOSING HOPE,
THEN YOU'RE NOT DOING
ENOUGH.**

Activism is an act of hope.
Hope is a discipline. And we
can do this because we are
here to create the future
we want.”

MARK RUFFALO

**ACTOR, DIRECTOR,
CLIMATE CHANGE ADVOCATE**





**DOCTORS FOR
extinction
rebellion**



**91-year-old
arrested
in climate
protest**

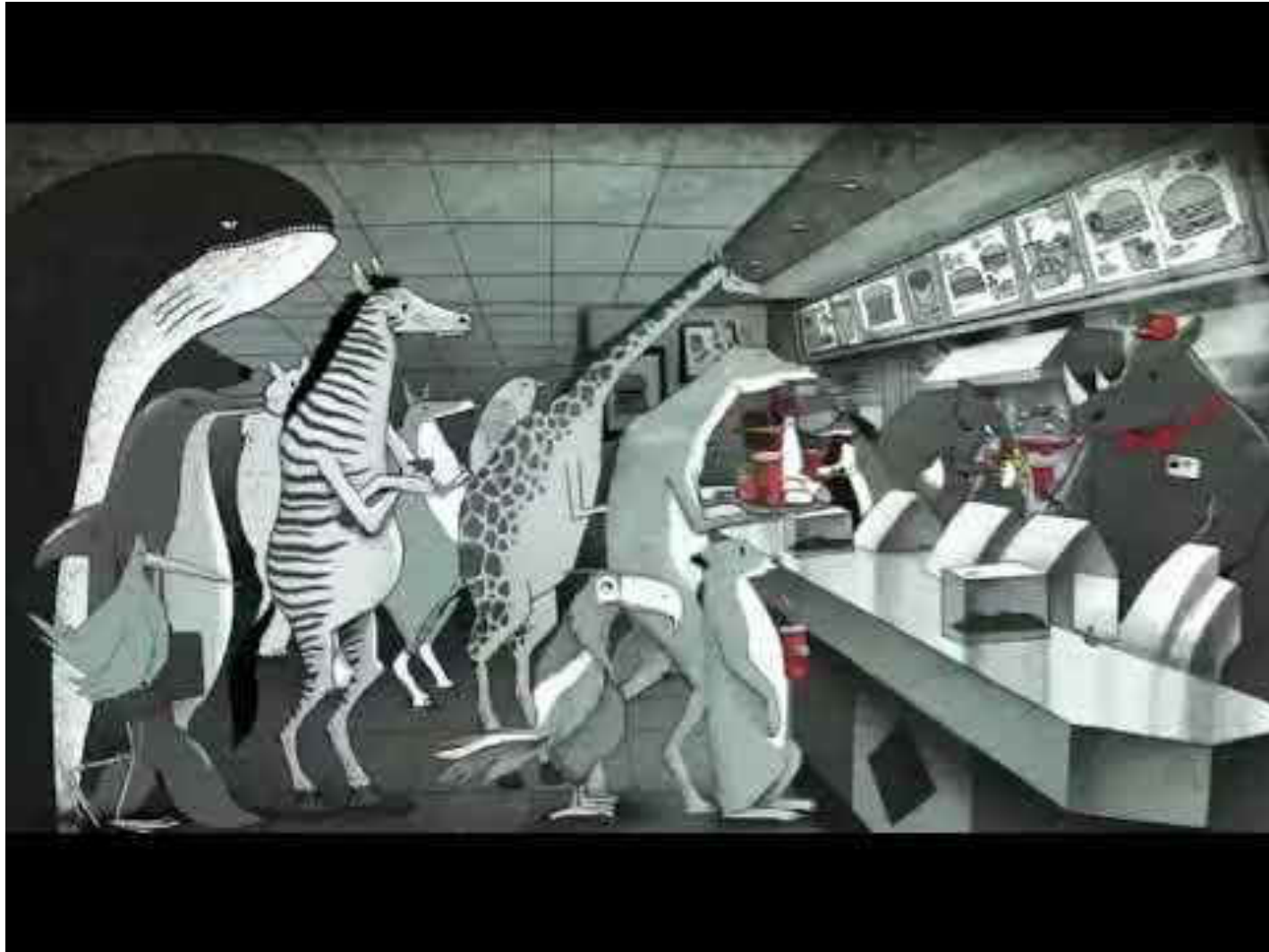


What can we do?

Scientists!

**You don't press the alarm and walk away before
everyone got the message!**

What can we do?



The Turning point | A film by Steve Cutts <https://www.youtube.com/watch?v=EDzEdj3wvJM>

These are the make or break years.

Do something!

Speak up!

Thanks for listening.