WHY DO WE NEED TO ACT ON CLIMATE CHANGE?

PANEL SESSION



Dr Kathleen Beyer
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UNIVERSITY of TASMANIA

Why climate action? What do we know?

Hobart Climate Assembly 17/02/2024

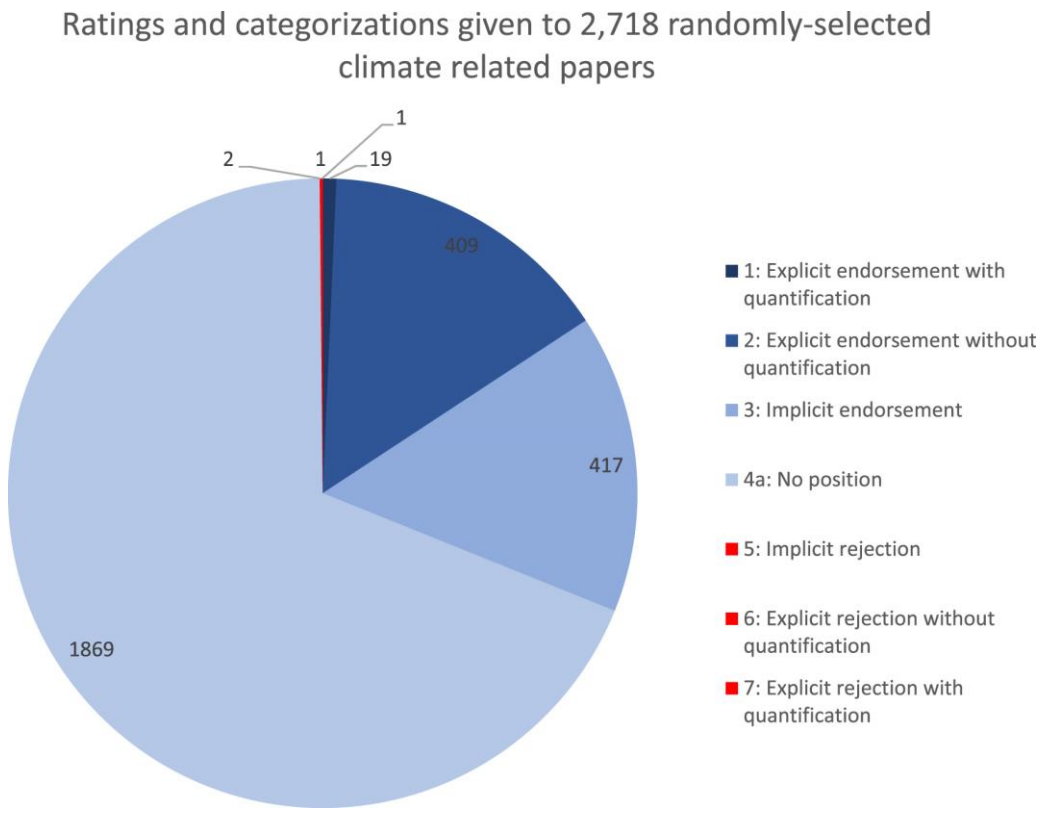


Dr Kathleen Beyer

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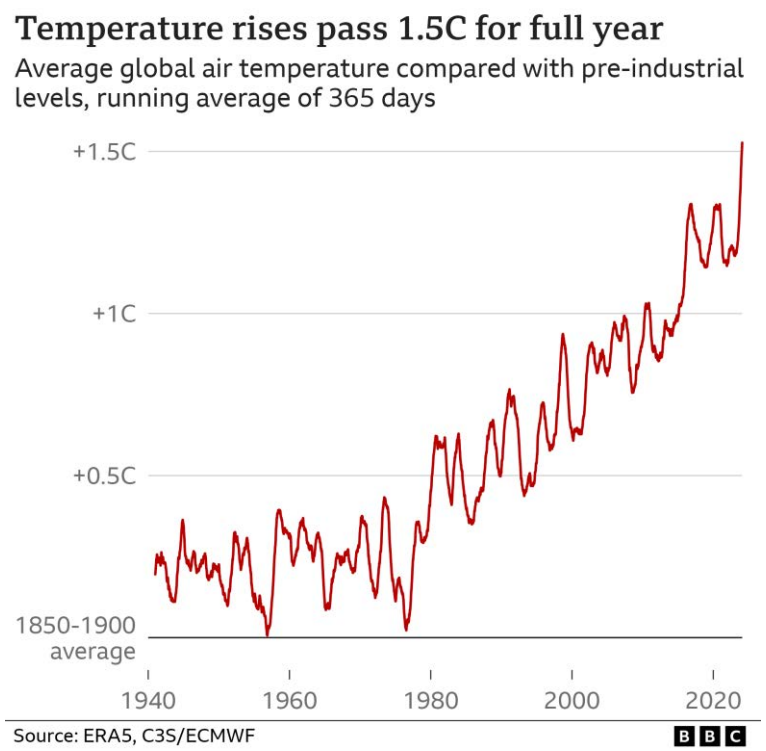
Greater than 99% consensus on human caused climate change in the peer-reviewed scientific literature

"...there is no significant scientific debate among experts about whether or not climate change is human-caused. This issue has been comprehensively settled, and the reality of anthropogenic climate change (ACC) is no more in contention among scientists than is plate tectonics or evolution"

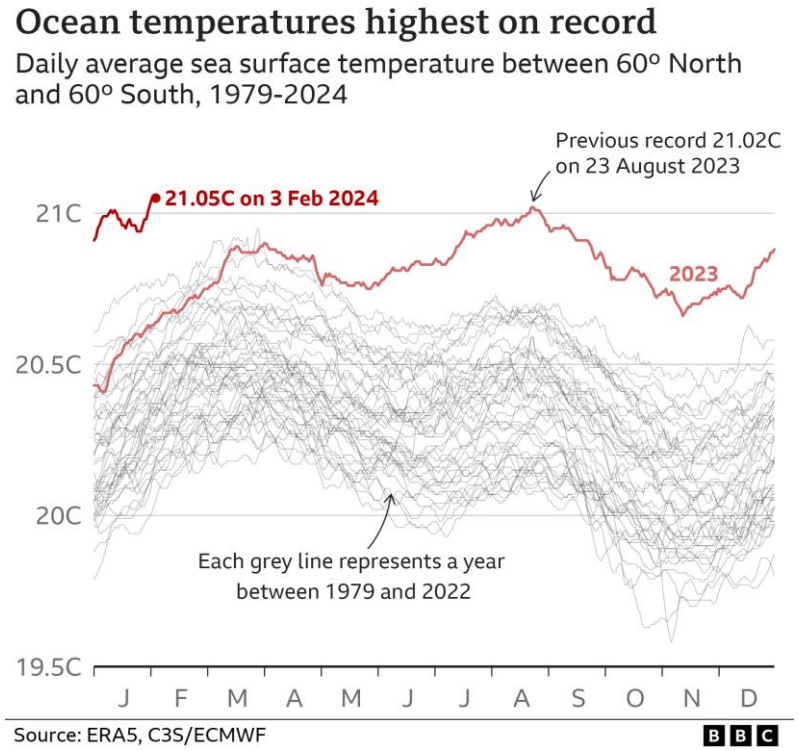


https://iopscience.iop.org/article/10.1088/1748-9326/ac2966

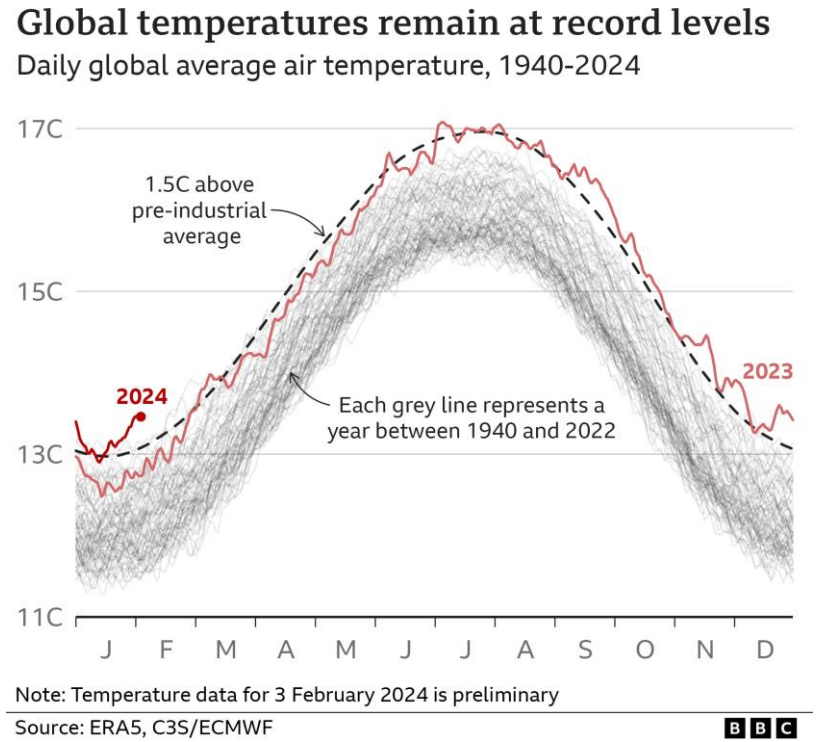
2023 - World's first year-long breach of key 1.5C warming limit



The period from February 2023 to January 2024 reached 1.52C of warming, according to the EU's Copernicus Climate Change Service. The graph above graph shows how that compares with previous years.



The world's sea surface is also at its highest ever recorded average temperature - yet another sign of the widespread nature of climate records. As the graph above shows, it's particularly notable given that ocean temperatures don't normally peak for another month or so.

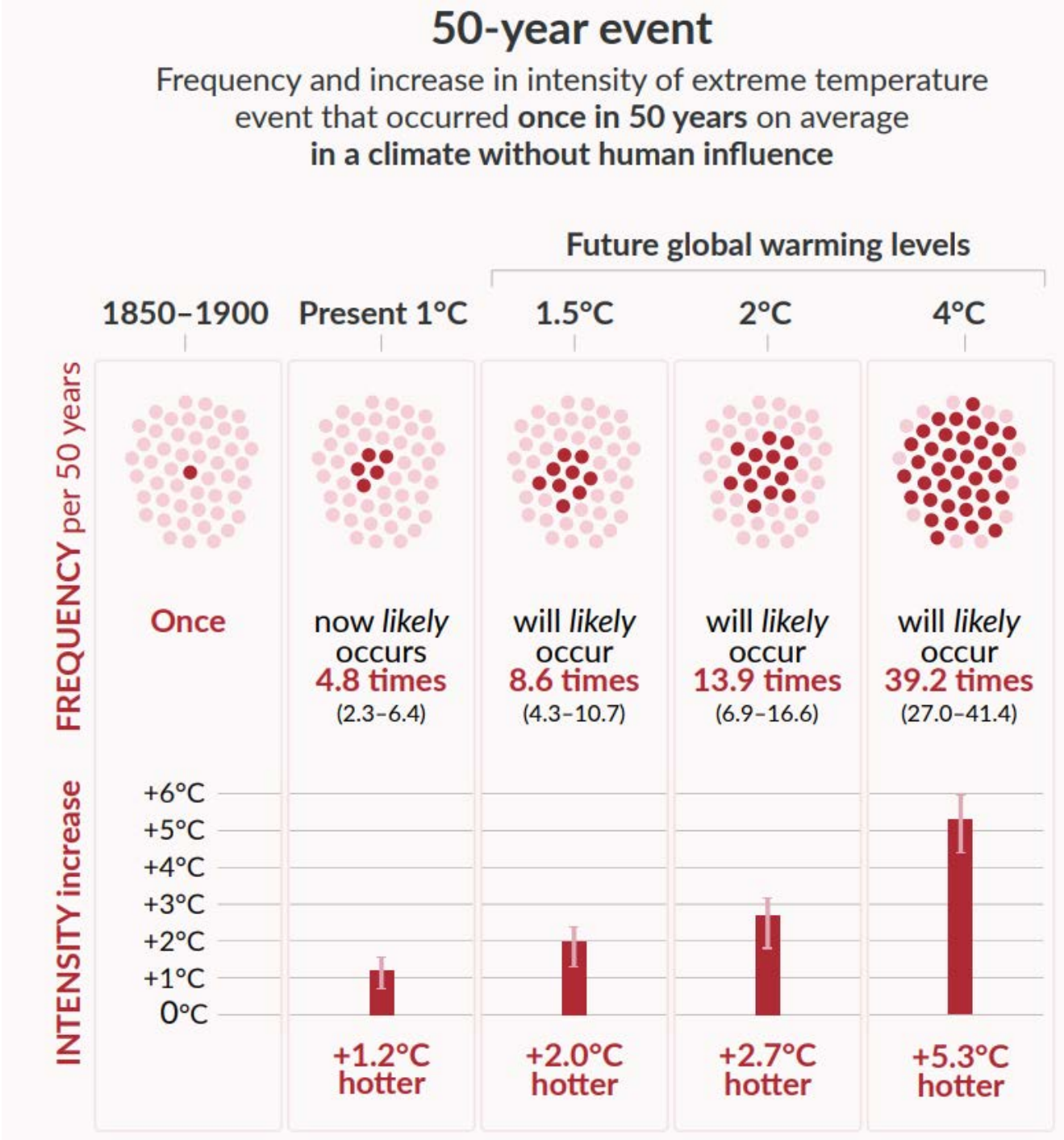


Global average air temperatures began exceeding 1.5C of warming on an almost daily basis in the second half of 2023, when El Niño began kicking in, and this has continued into 2024. This is shown where the red line is above the dashed line in the graph above.

https://www.bbc.com/news/science-environment-68110310

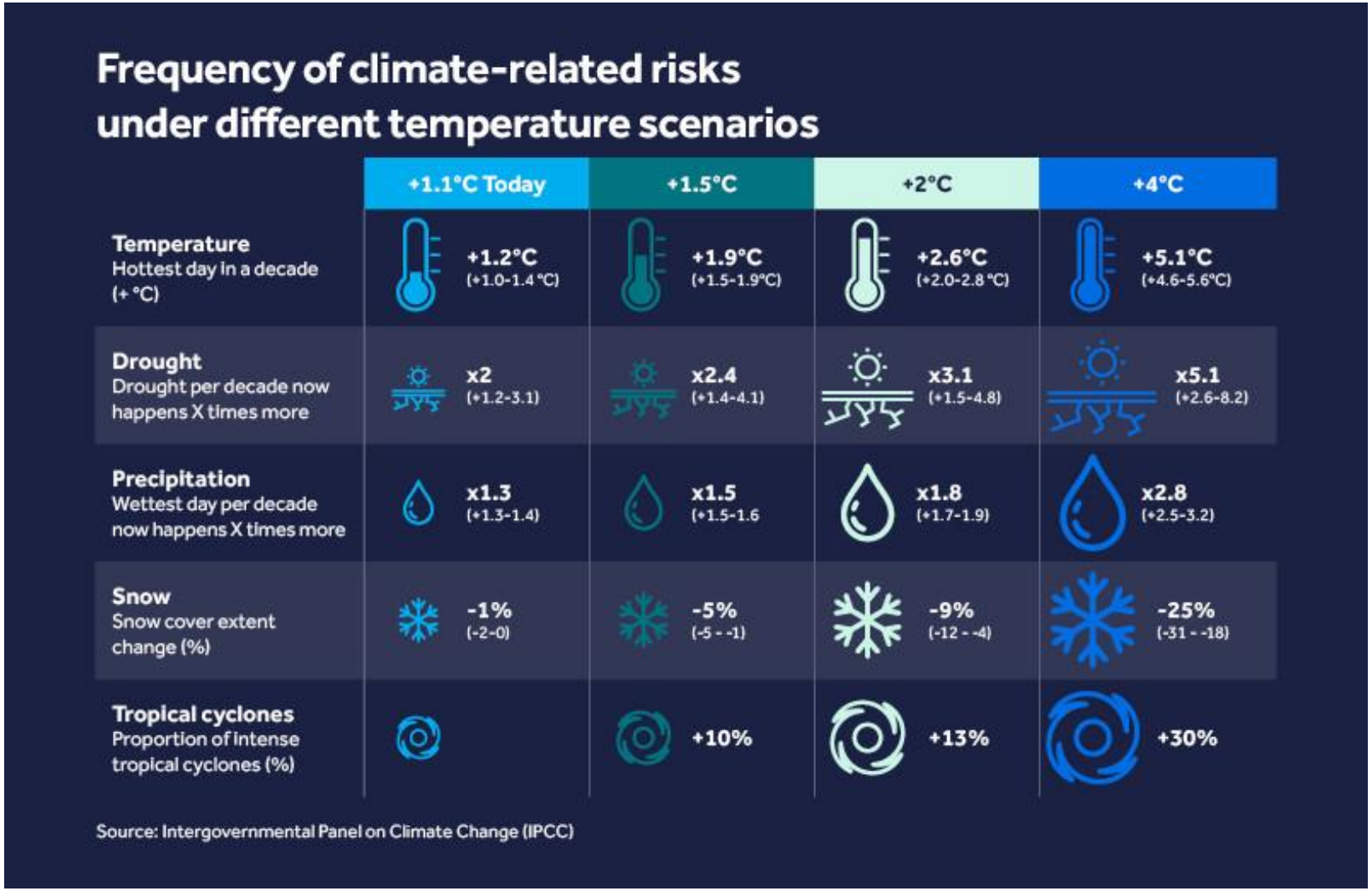
Changes in temperature

- Heat extremes are occurring **more frequently everywhere**.
- 1 in 50-year event occurs 4.8 times more often now than it did in 1850-1900.
- This **trend will continue** with this type of heat extreme occurring in most years if the global temperature reaches 4 degrees above preindustrial levels.



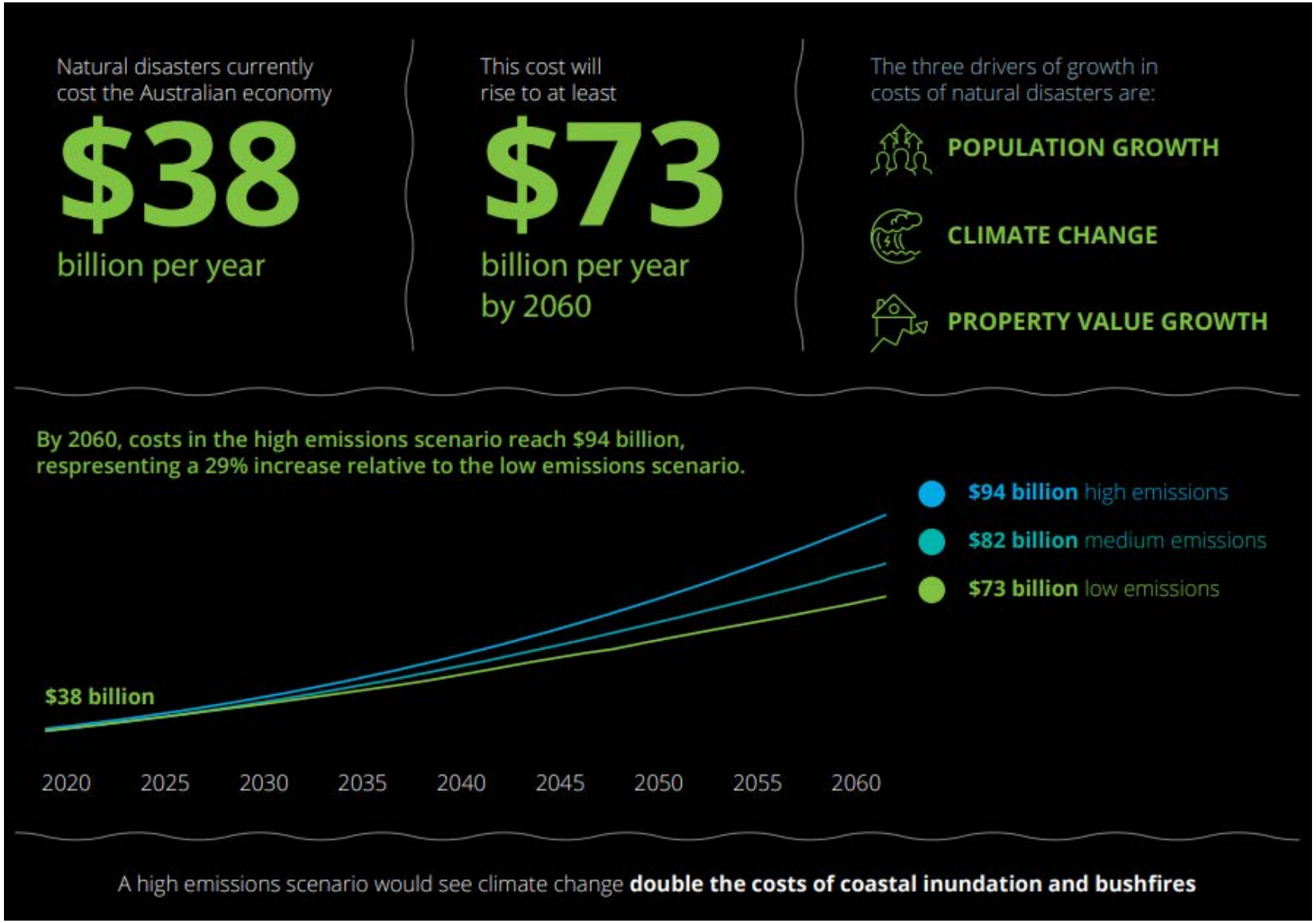
Projected changes are shown at global warming levels of 1°C, 1.5°C, 2°C, and 4°C and are relative to 1850–1900, representing a climate without human influence. The figure depicts frequencies and increases in intensity of a 1 in 50-year extreme heat event from the base period (1850–1900) under different global warming levels (IPCC, 2022).

How we tackle climate change now will have a significant impact on the severity and frequency of extreme weather events for decades.



Cost of disasters

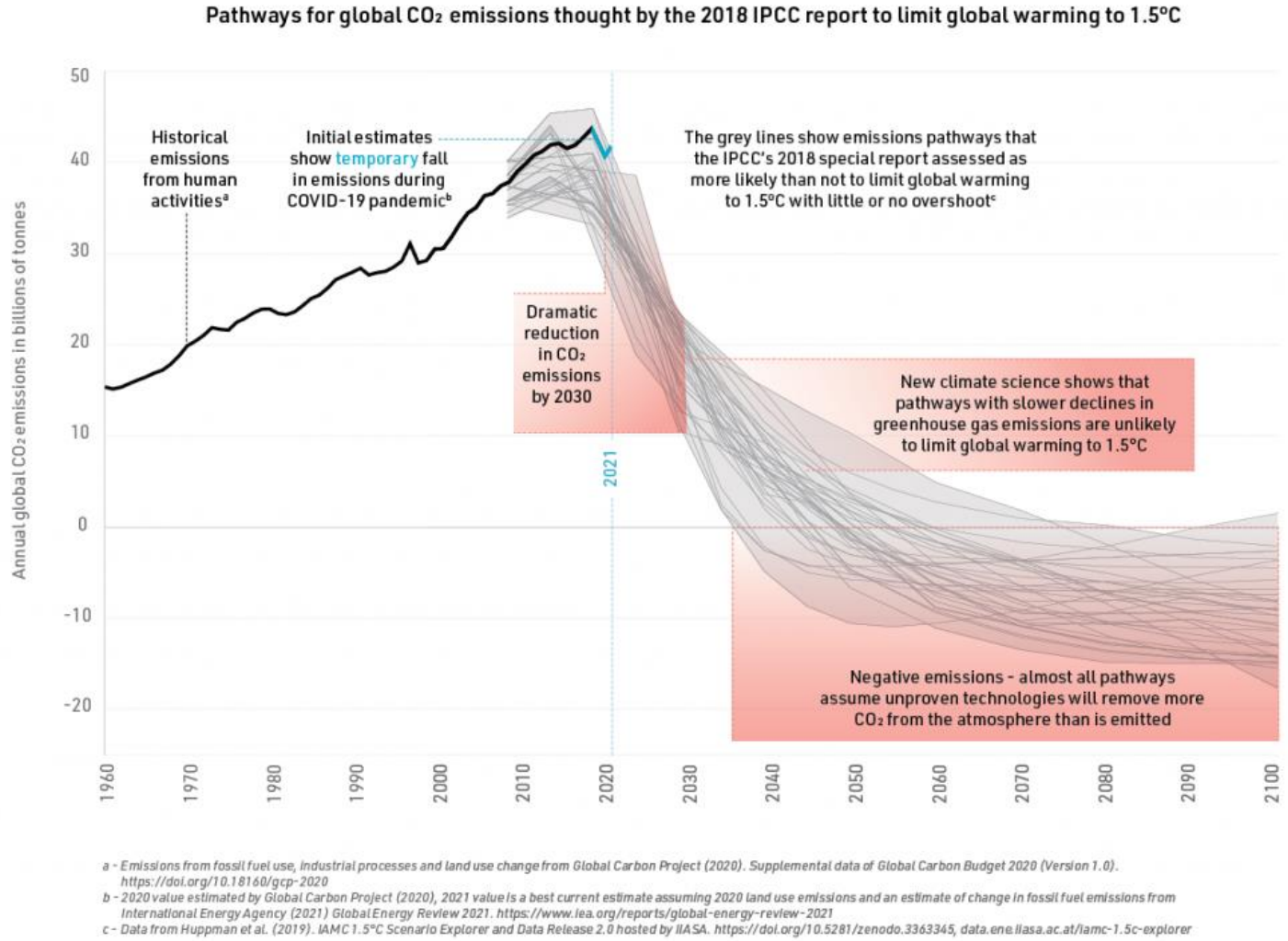
- THE ECONOMIC COSTS OF NATURAL DISASTERS IN AUSTRALIA



Deloitte Access Economics (2021) Special report: Update to the economic costs of natural disasters in Australia Australian Business Roundtable for Disaster Resilience & Safer Communities. 21 pages

Can we limit global warming to 1.5C°?

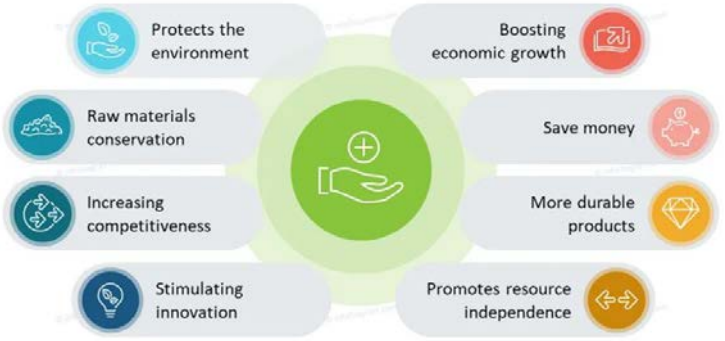
- **Achieving the 1.5°C target (Paris) is extremely challenging** (IPCC 2018).
- **Limiting warming to 1.5°C is now nearly impossible** without rapid emission reductions and large-scale carbon dioxide removal.
- The **consequences of 1.5°C warming are more manageable and adaptable compared to 2.0°C or higher**.
- **Aggressively reducing greenhouse gas emissions** towards the 1.5°C target will facilitate easier and less costly adaptation, even if reaching this goal proves unattainable.



Pathways for global CO2 emissions thought by the 2018 IPCC report to limit global warming to 1.5°C. Model results estimated that each of these pathways had a greater than even chance of limiting global warming to 1.5°C with little or no overshoot. Also shown are historical emissions from human activities, including the recent temporary fall in emissions during the COVID-19 pandemic.

2040: everything we need for a sustainable world already exists

- Solutions exist that not only reduce emissions and restore ecosystems but also bring about **improvements in health, income equality, security and community wellbeing, for example:**
  - **Decentralised solar micro-grids** in remote areas, enabling **energy exchange** among households and supporting local economies.
- **Regenerative agriculture practices** are another solution, drawing carbon from the atmosphere and enriching soil, leading to improved water retention and nutrient-rich food production.
- **Seaweed offers a powerful tool for carbon sequestration**, growing rapidly while restoring marine habitats and providing various resources such as food, fibre, and biofuels to communities.
- **Empowering girls and women** through education has profound and far-reaching impacts, underscoring the potential for positive change.



Economic benefits of sustainable practices

Tasmania

- met the 2022 target of 100 per cent self-sufficiency in renewable electricity generation.
- first-class wind resources and extensive hydroelectricity schemes.
- Tasmania Renewable Energy Target (2020): aims to increase the State's renewable energy output by 200 per cent based on 2022's renewable energy figures. In 2040, Tasmania will produce twice as much clean power as in 2022.



https://www.theguardian.com/environment/2019/may/21/determination-and-passion-how-these-renewable-energy-resources-can-save-our-planet

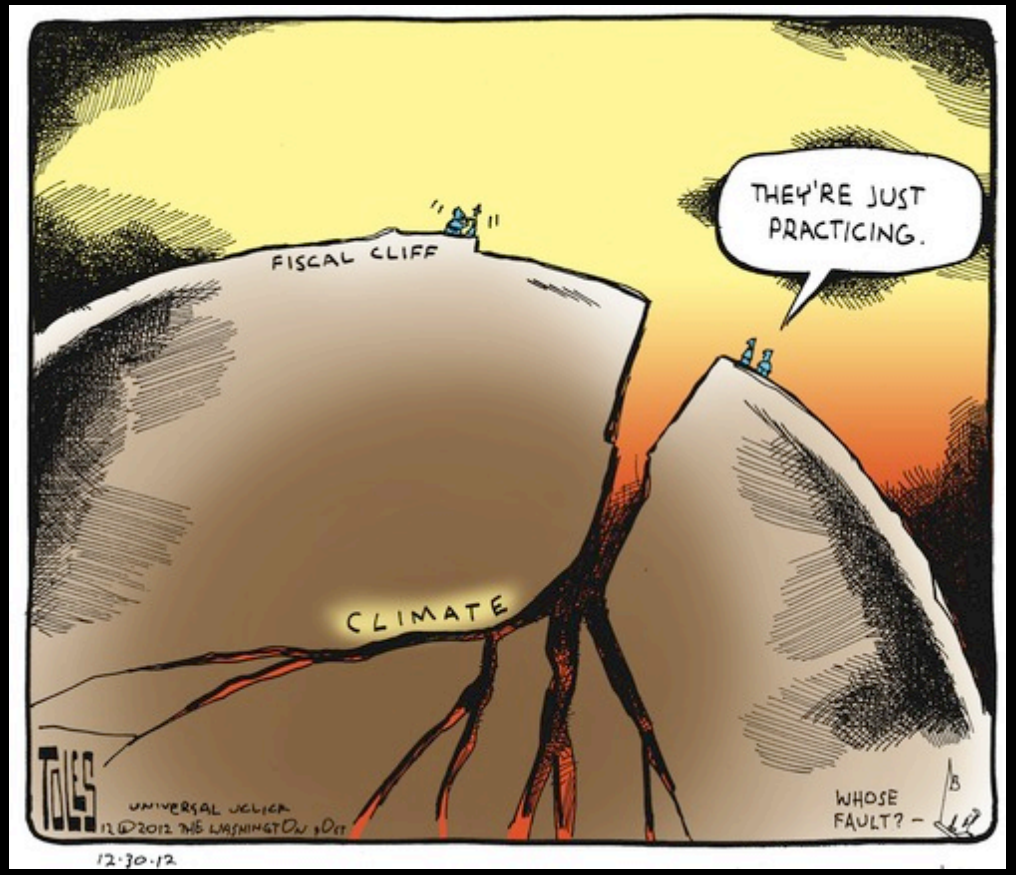
The future is NOW - Imperatives for Immediate Climate Action

- **A 100 Percent Clean Future**
  - Building a net-zero economy.
  - Decarbonisation transition – make more informed decisions.
- **Triple up on renewables**
  - Action to increase clean energy generation (e.g. wind, solar, water).
  - Consider the renewable energy supply chain – end-to-end approach.
  - Circularity - involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible
- **Including people and nature**
  - Nature, including the interplay of water, nature, and ecosystems.
  - Creating better and more resilient food systems.
  - People-focused approach.
  - Place-based solutions,.
- **Accountability and commitments (local to global)**
  - An environmental justice commitment. Policies that would advance environmental justice, including by identifying and cutting disproportionately high levels of toxic pollution in vulnerable communities.





A critical time for action on climate



Dr Mel Fitzpatrick
Climate Scientist and Communicator

It’s 3:23 in the morning…

Frozen Time Machine



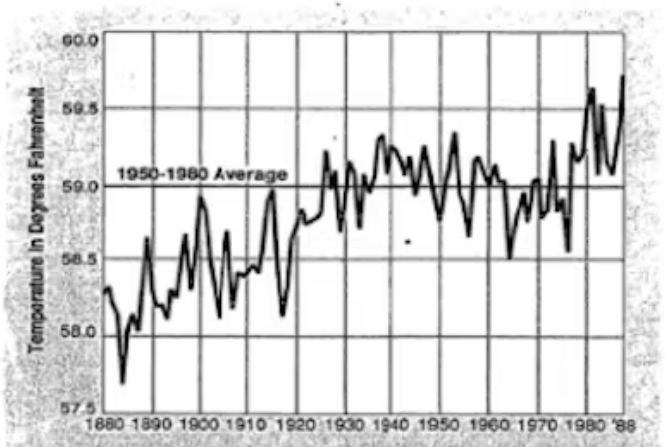
Australia ratified UNFCCC in 1992

"All the News That's Fit to Print"

The New York Times

VOL. CXXXVII . . . No. 47,546 NEW YORK, FRIDAY, JUNE 24, 1988

Global Warming Has Begun, Expert Tells Senate



Global Warming: Greenhouse Effect?

Average global temperatures through the first five months of 1988. As a baseline, scientists use the global average from 1950 to 1980.

Source: James E. Hansen and Sergej Lebedeff

The New York Times/June 24, 1988

Sharp Cut in Burning of Fossil Fuels Is Urged to Battle Shift in Climate

By PHILIP SHABECOFF

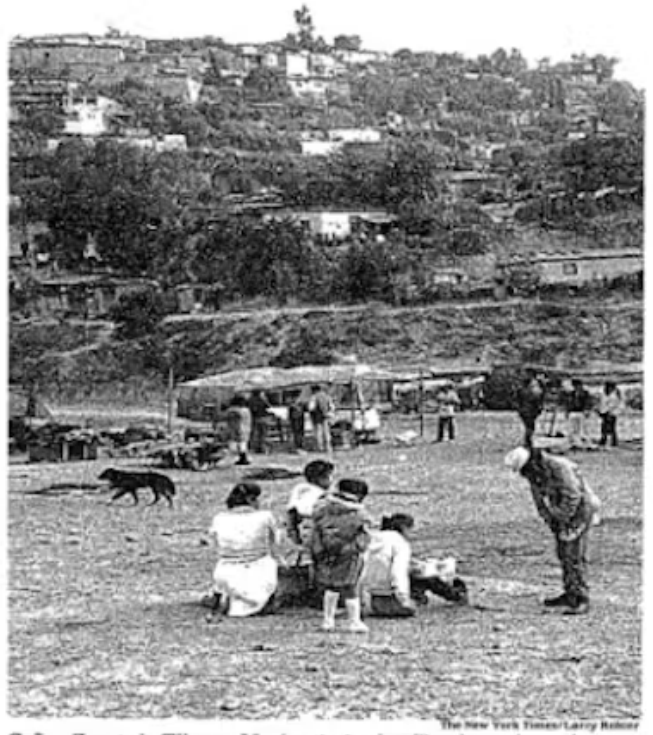
Special to The New York Times

WASHINGTON, June 23 — The earth has been warmer in the first five months of this year than in any comparable period since measurements began 130 years ago, and the higher temperatures can now be attributed to a long-expected global warming trend linked to pollution, a space agency scientist reported today.

Until now, scientists have been cautious about attributing rising global temperatures of recent years to the predicted global warming caused by pollutants in the atmosphere, known as the "greenhouse effect." But today Dr. James E. Hansen of the National Aeronautics and Space Administration told a Congressional committee that it was 99 percent certain that the warming trend was not a natural variation but was caused by a buildup of carbon dioxide and other artificial gases in the atmosphere.

An Impact Lasting Centuries

Dr. Hansen, a leading expert on climate change, said in an interview that there was no "magic number" that showed when the greenhouse effect was actually starting to cause changes in climate and weather. But he added, "It is time to stop waffling so much and say that the evidence is pretty strong



The New York Times/Larry Rohter

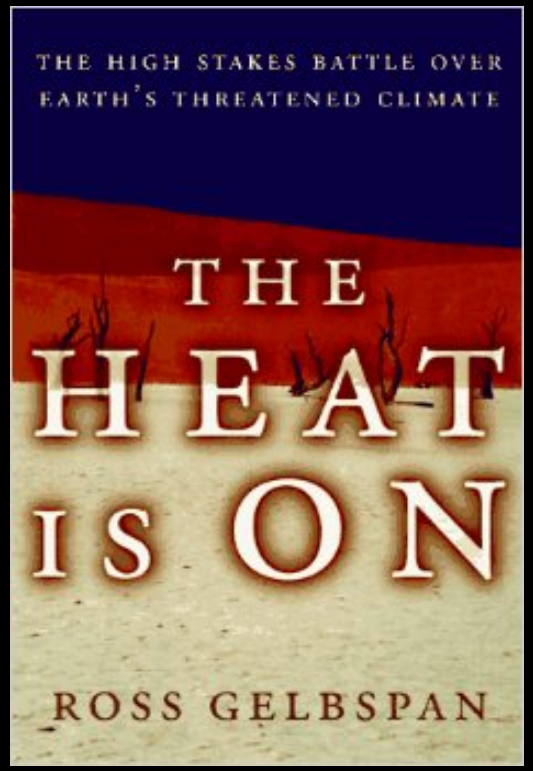
Cañon Zapata in Tijuana, Mexico, the busiest illegal crossing point.

Drought Raising Food Prices; Inflation Effect Seems Minor

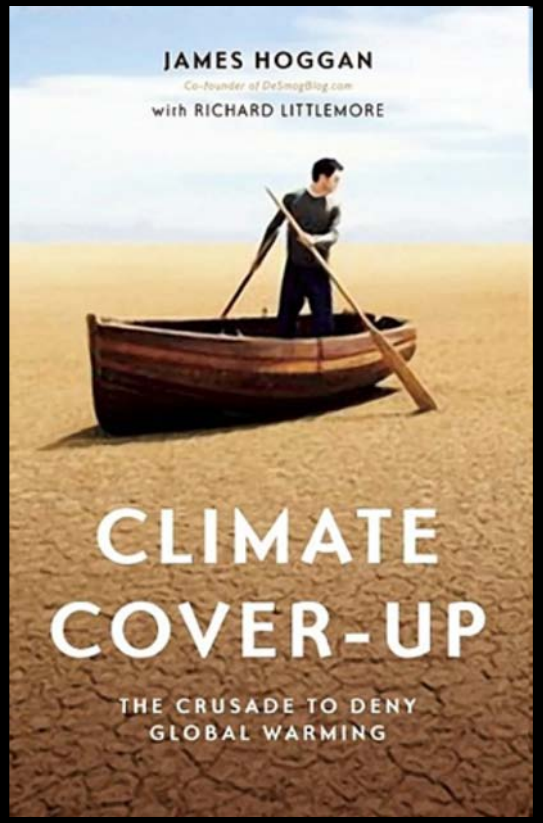
By ROBERT D. HERSHEY Jr.

Special to The New York Times

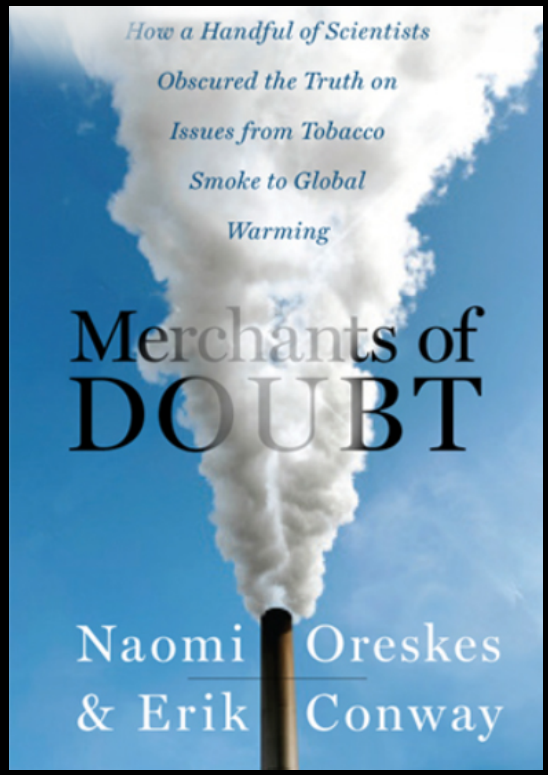
Decades of Climate Disinformation



1997



2009



2010

IPCC – Six Major Reports



Solutions already exist



Why Us?


YOUTH CHOOSE
CLIMATE JUSTICE!
DON'T NUKE THE CLIMATE
VOTE THE
ENVIRONMENT
I'M MARCHING FOR
WISCONSIN
#PEOPLESCLIMATE
IT'S SIMPLE,
DO THE MATH.
CHANGE THE POLITICS, NOT THE CLIMATE
I'M MARCHING FOR
My Generation
#PEOPLESCLIMATE
IT'S NOT EASY BEING GREEN BUT IT'S NECESSARY
ENVIRONMENTAL
FOOD JUSTICE
DIVEST
IS IT WORTH MELTING FOR?
I'M MARCHING FOR
WILL THANK YOU!

Earth’s Immune System



We are all part of the solution



COMMITMENT TO URGENT ACTION

We are experiencing a global climate crisis but the impacts are felt locally

Global	196 nations committed to the UN Paris Agreement and the UN 2030 Sustainable Development Goals
Federal	Australian Climate Change Bill 2022 legislates reduction of Australia's net greenhouse gas emissions to 43% below 2005 levels by 2030 and net zero by 2050
State	Tasmanian Climate Change (State Action) Bill 2021 legislates target to maintain net zero emissions by 2030
City of Hobart	Declared a climate and biodiversity emergency in 2019



COMMITMENT TO URGENT ACTION

We have a commitment to act across all tiers of government

Globally cities are responsible for:

- More than 70% of global emissions
- 75% of energy use
- 80% of global gross domestic product
- Home to more than half the world's population.

Local government is the tier of government closest to the community, the first responder in disasters and there for the long haul in recovery.

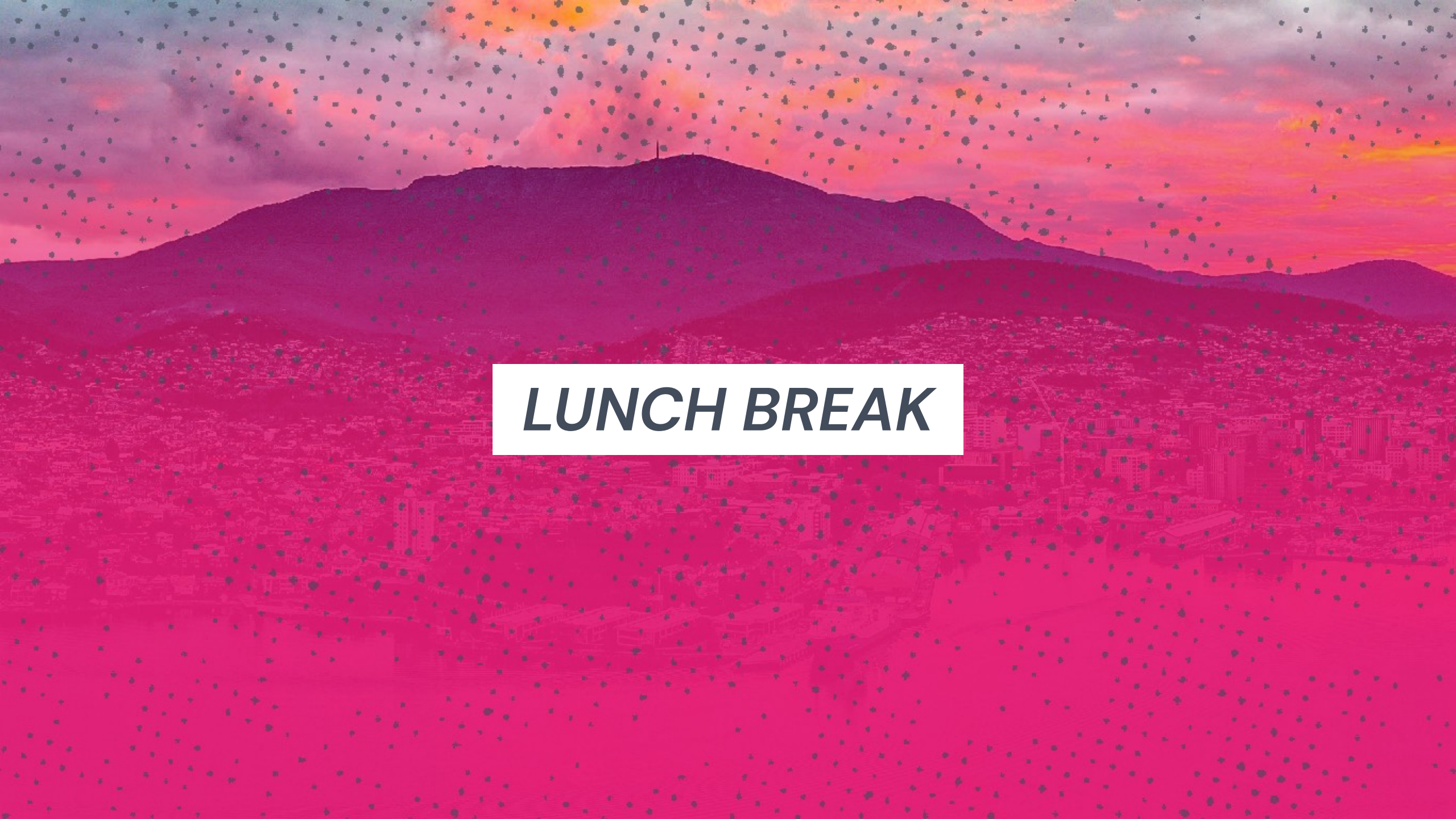
Our cities can be labs for climate solutions...



FOR CURRENT & FUTURE GENERATIONS

- Climate change is one of the greatest threats to the wellbeing of our community.
- 90% of the Hobart community have concerns about climate change, 80% very concerned.
- We have an obligation to address climate change for current and future generations.
- We are driven to protect the places and people we love most in the world.




LUNCH BREAK

REFLECTIONS

At your tables:

- Have a chat about what you have found interesting or challenging so far?
- Has anything surprised you so far?
- What are you most looking forward to over this weekend?



MOST INTERESTING THING YOU'VE LEARNT SO FAR?

Go to

www.menti.com

Enter the code

5687 4075



Or use QR code