Climate science: strong in 2009, stronger in 2025

Kristina Dahl
September 15, 2024

CLIMATE CENTRAL

The central focus of attribution science is understanding and quantifying the role human-caused climate change is playing in changing environmental hazards and their consequences.

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Letter | Published: 02 December 2004

Human contribution to the European heatwave of 2003

Peter A. Stott, D. A. Stone & M. R. Allen

Nature **432**, 610–614 (2004) | Cite this article

world weather attribution

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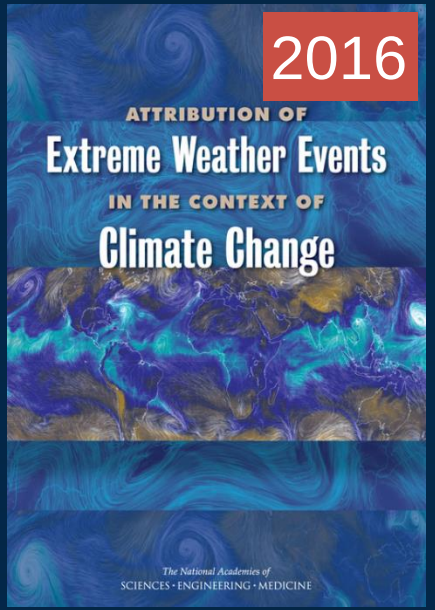
Latest analyses

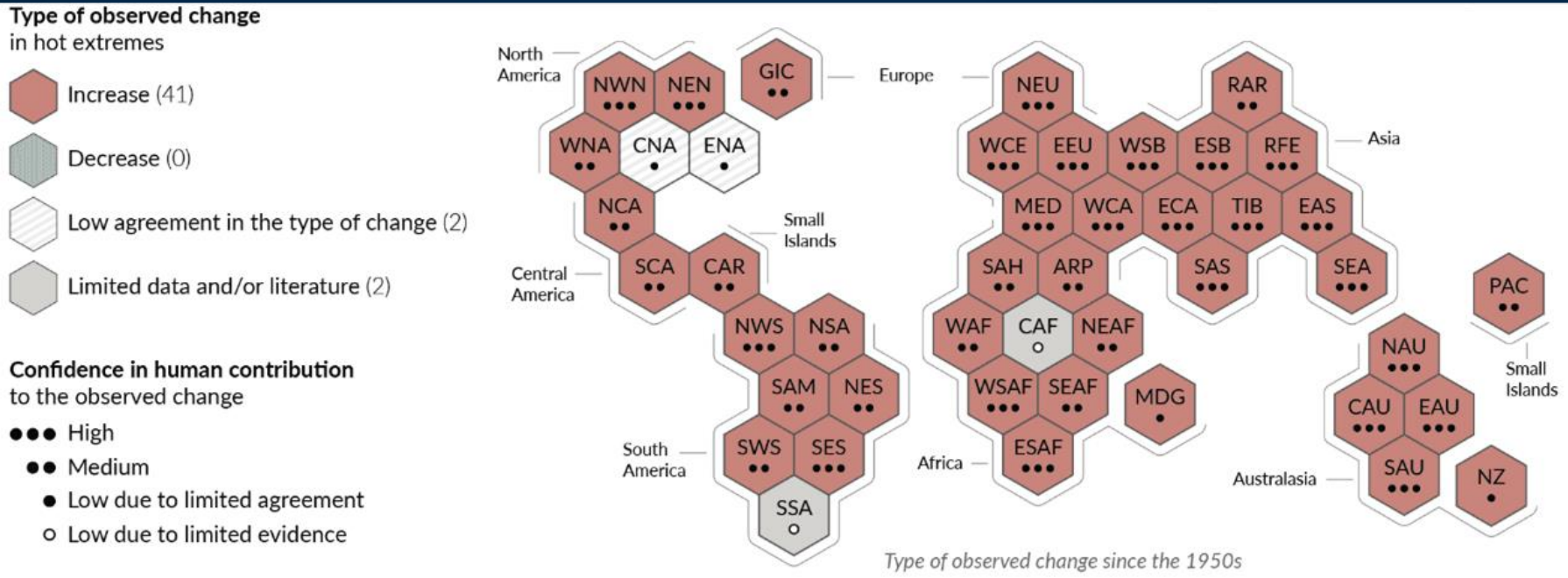
Climate change likely increased extreme monsoon rainfall, flooding highly vulnerable communities in Pakistan

Without human-caused climate change temperatures of 40°C in the UK would have been extremely unlikely

Climate change increased heavy rainfall, hitting vulnerable communities in Eastern Northeast Brazil

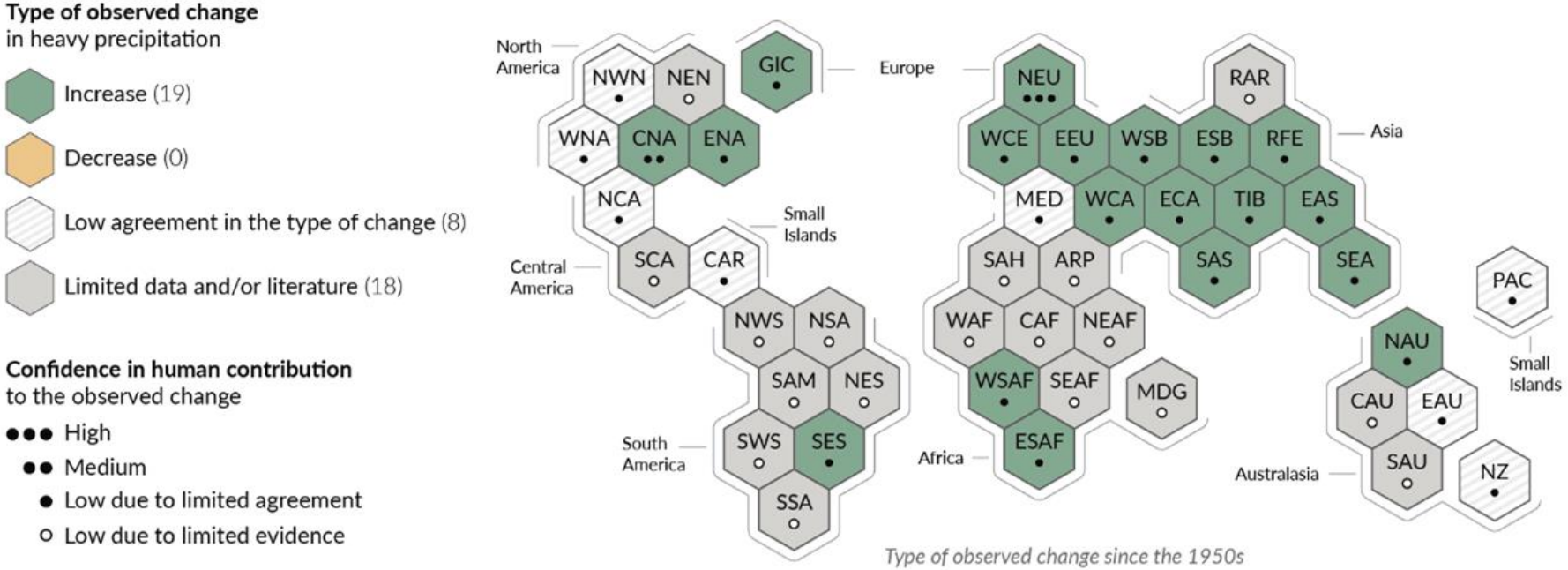


Extremes are increasing. We know it's climate change.



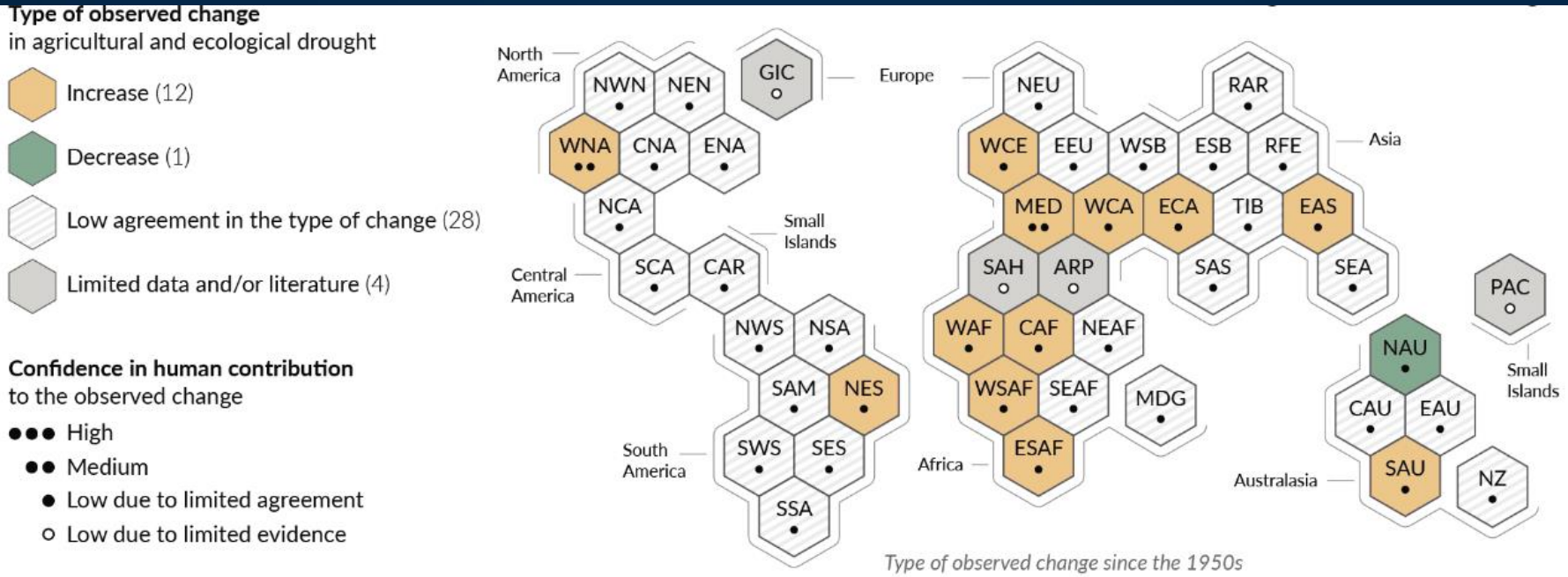
IPCC AR6 WGI SPM, 2021

Some extremes are more attributable than others…

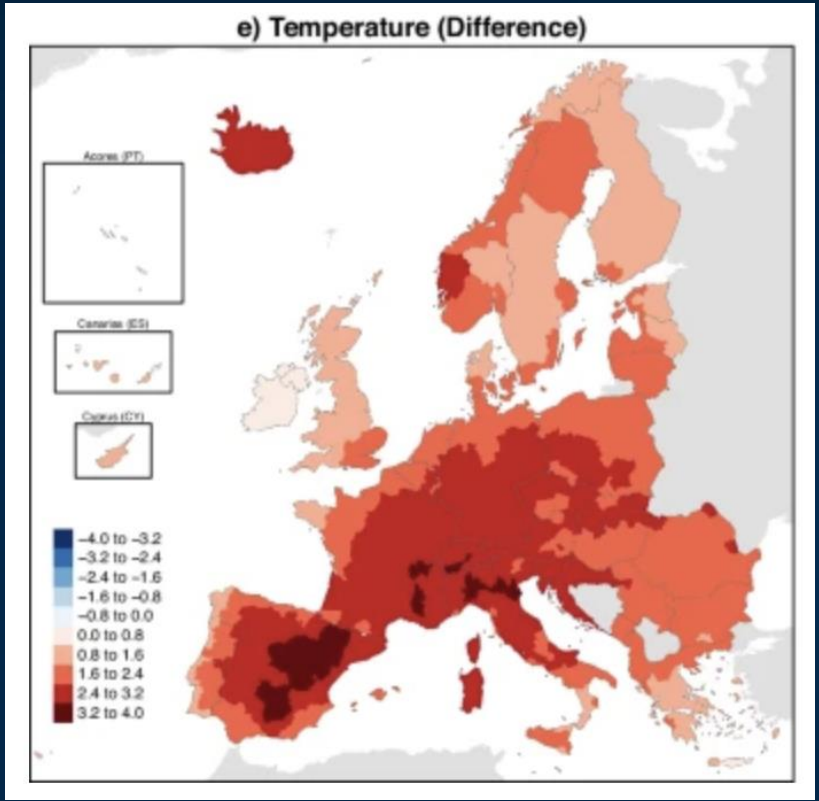


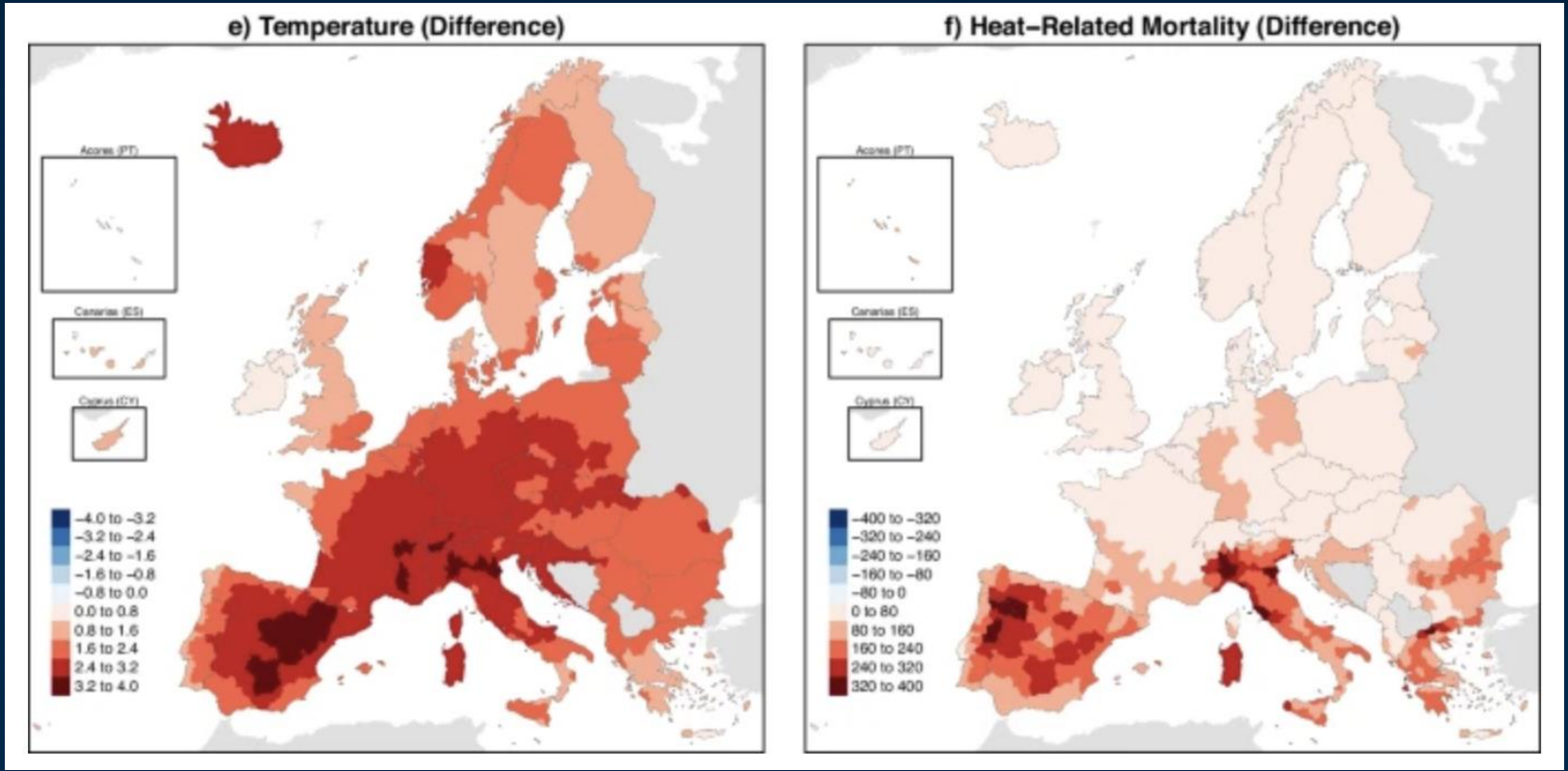
IPCC AR6 WGI SPM, 2021

Some extremes are more attributable than others…



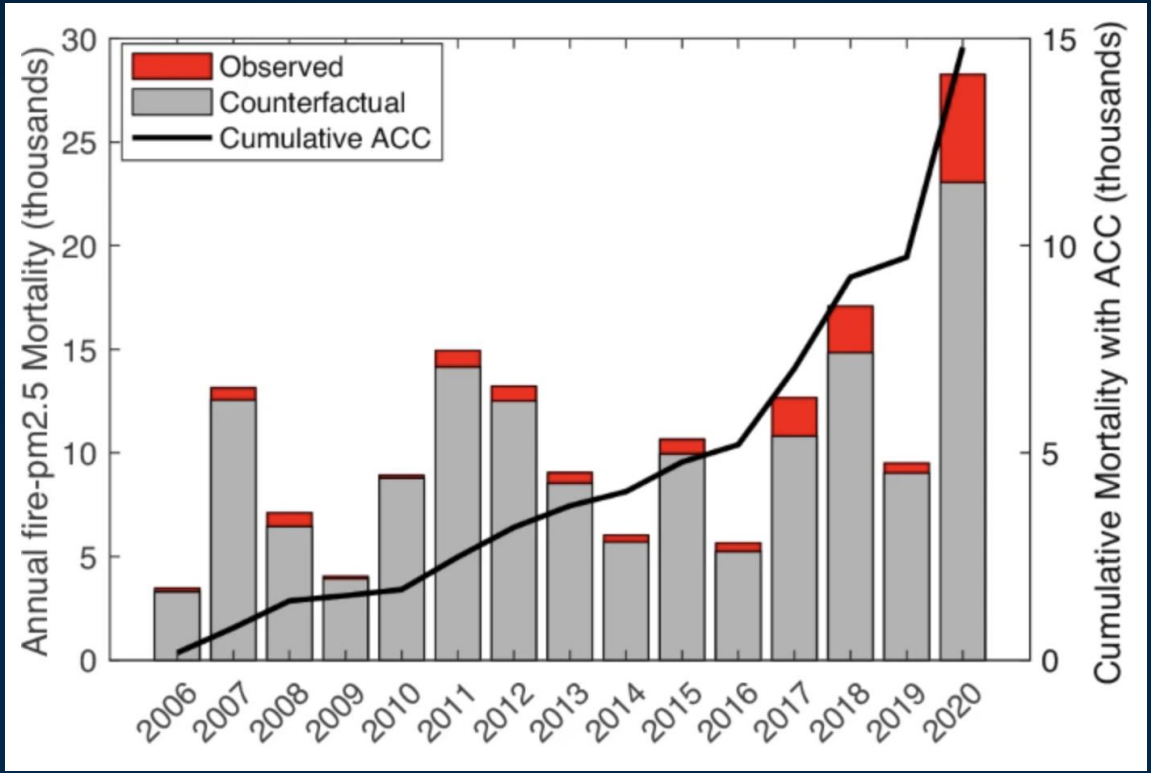
IPCC AR6 WGI SPM, 2021


e) Temperature (Difference)
Acores (PT)
Canarias (ES)
Cyprus (CY)
−4.0 to −3.2
−3.2 to −2.4
−2.4 to −1.6
−1.6 to −0.8
−0.8 to 0.0
0.0 to 0.8
0.8 to 1.6
1.6 to 2.4
2.4 to 3.2
3.2 to 4.0



"The record-breaking temperatures in Europe during the 2022 summer were associated with over 60,000 heat-related deaths…We attribute **half of this mortality burden** to anthropogenic warming."

Beck et al., 2024



"Climate change contributed to approximately 15,000 wildfire particulate matter deaths over 15 years…and a cumulative economic burden of $160 billion."

Law et al., 2025