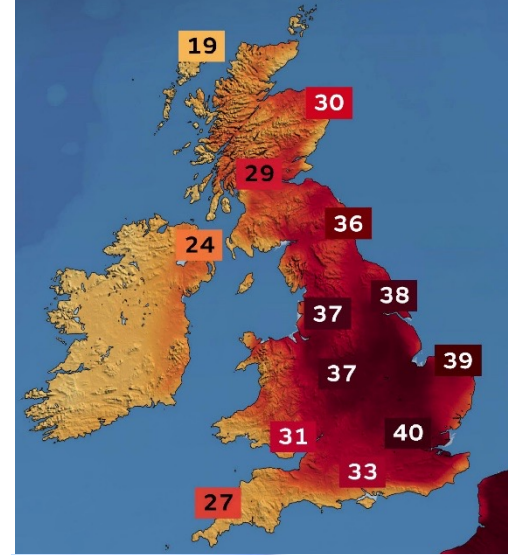
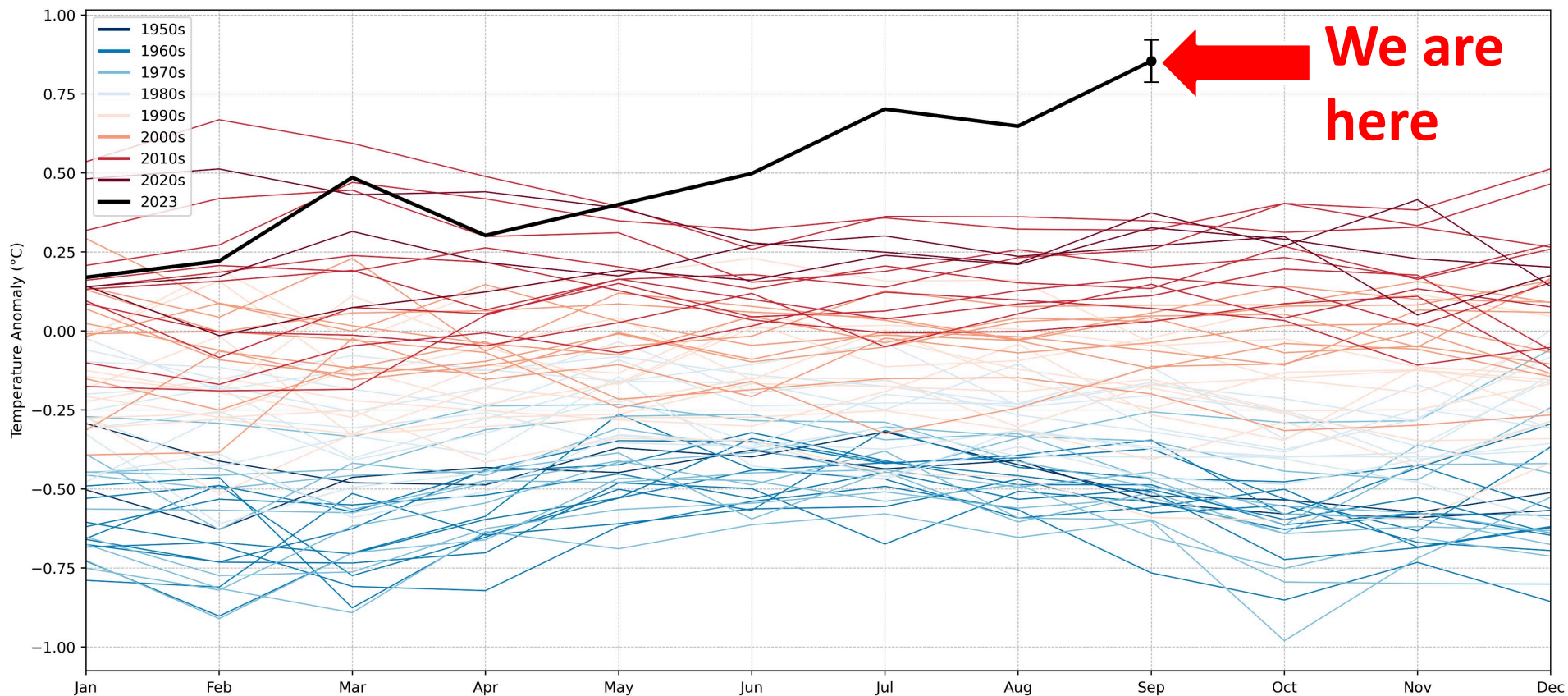


UK Climate Risk Metrics in a Global Context

Prof Richard Betts, Met Office and University of Exeter



Monthly global temperature anomalies relative to 1991-2020 average




A large wildfire is burning in a forest. Thick black smoke is rising from the fire, filling the sky. The fire is visible as a bright orange line along the edge of the forest. The background shows a hazy, smoke-filled landscape.

May-June 2023

Climate change more than doubled the likelihood of extreme fire weather conditions in Eastern Canada

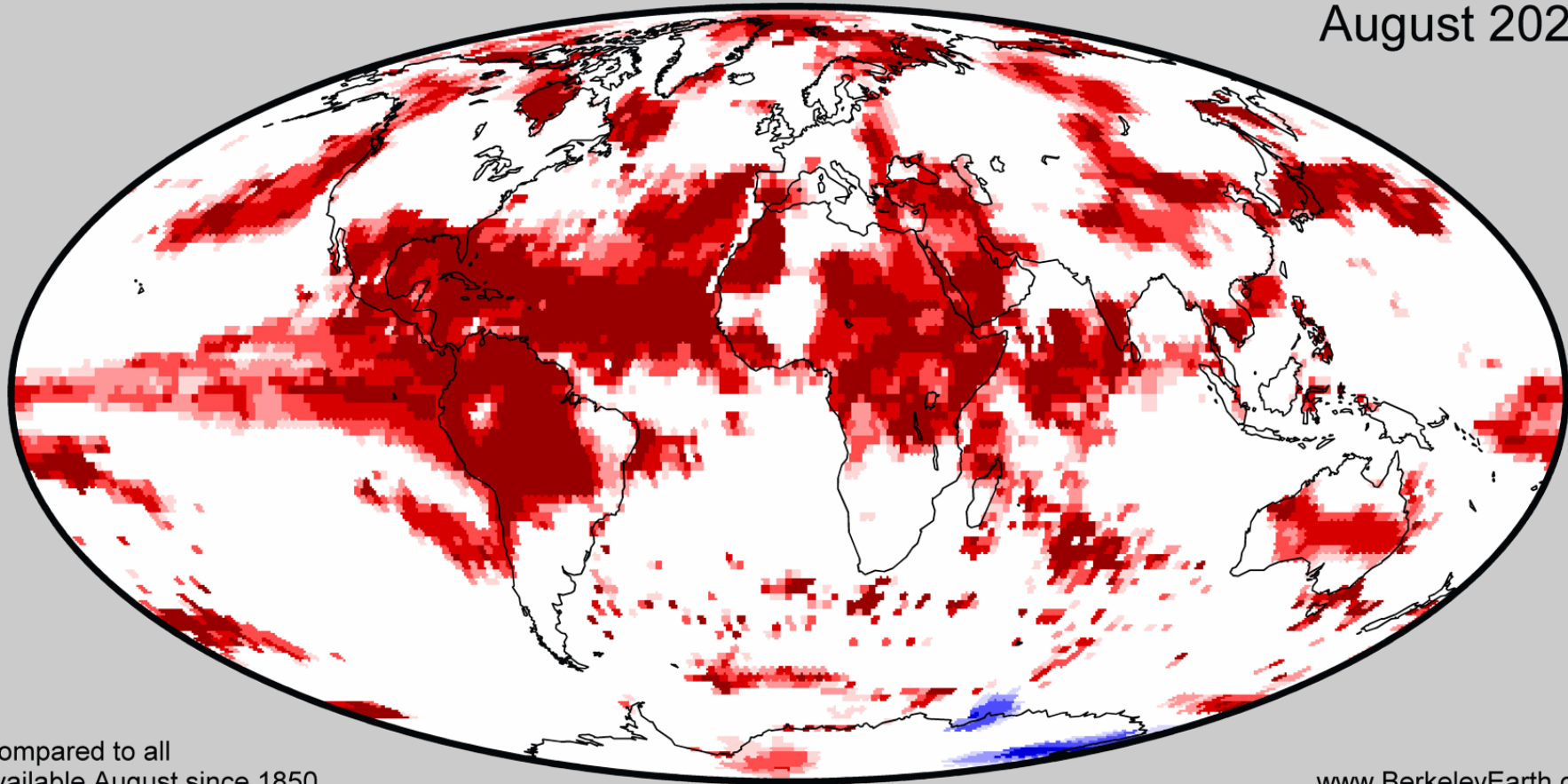
Over 13 million hectares burned

Extreme heat in North America,
Europe and China in July 2023 made
much more likely by climate change

A close-up photograph showing a firefighter with blonde hair and sunglasses applying sunscreen to the forehead of a man. The man is wearing a dark blue firefighter's uniform with a visible patch on the shoulder. They are standing in front of a red fire truck, with the text 'THA 199' visible on its side. The scene is brightly lit, suggesting a sunny day.

China: Was 1 in 250 years. Now 1 in 5 years
Europe: Was “virtually impossible”. Now 1 in 10 years
US/Mexico: Was “virtually impossible”. Now 1 in 15 years

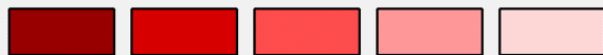
August 2023



Compared to all
available August since 1850

www.BerkeleyEarth.org

Warmest



1st

2nd

3rd

4th

5th

Coldest



1st

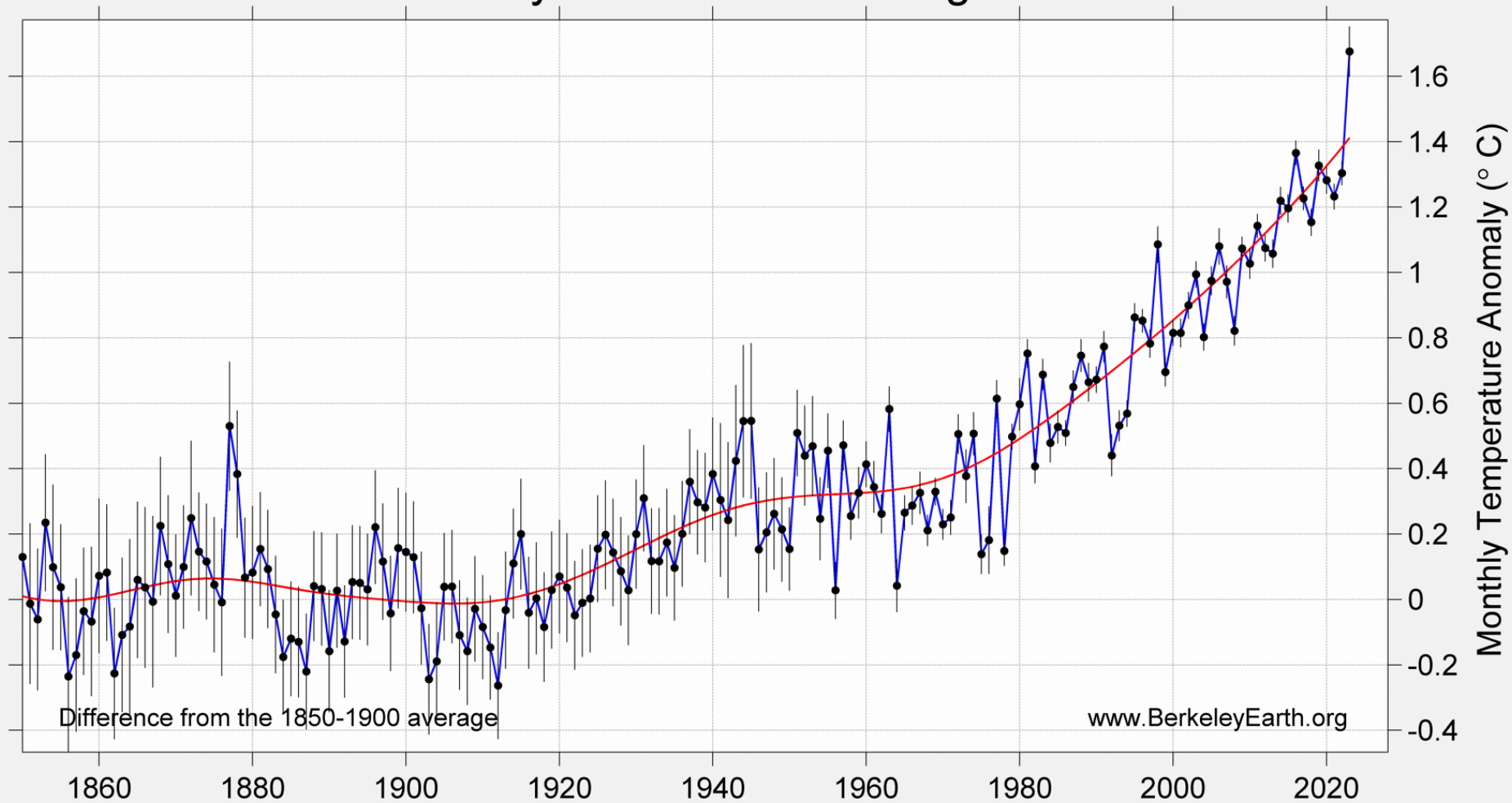
2nd

3rd

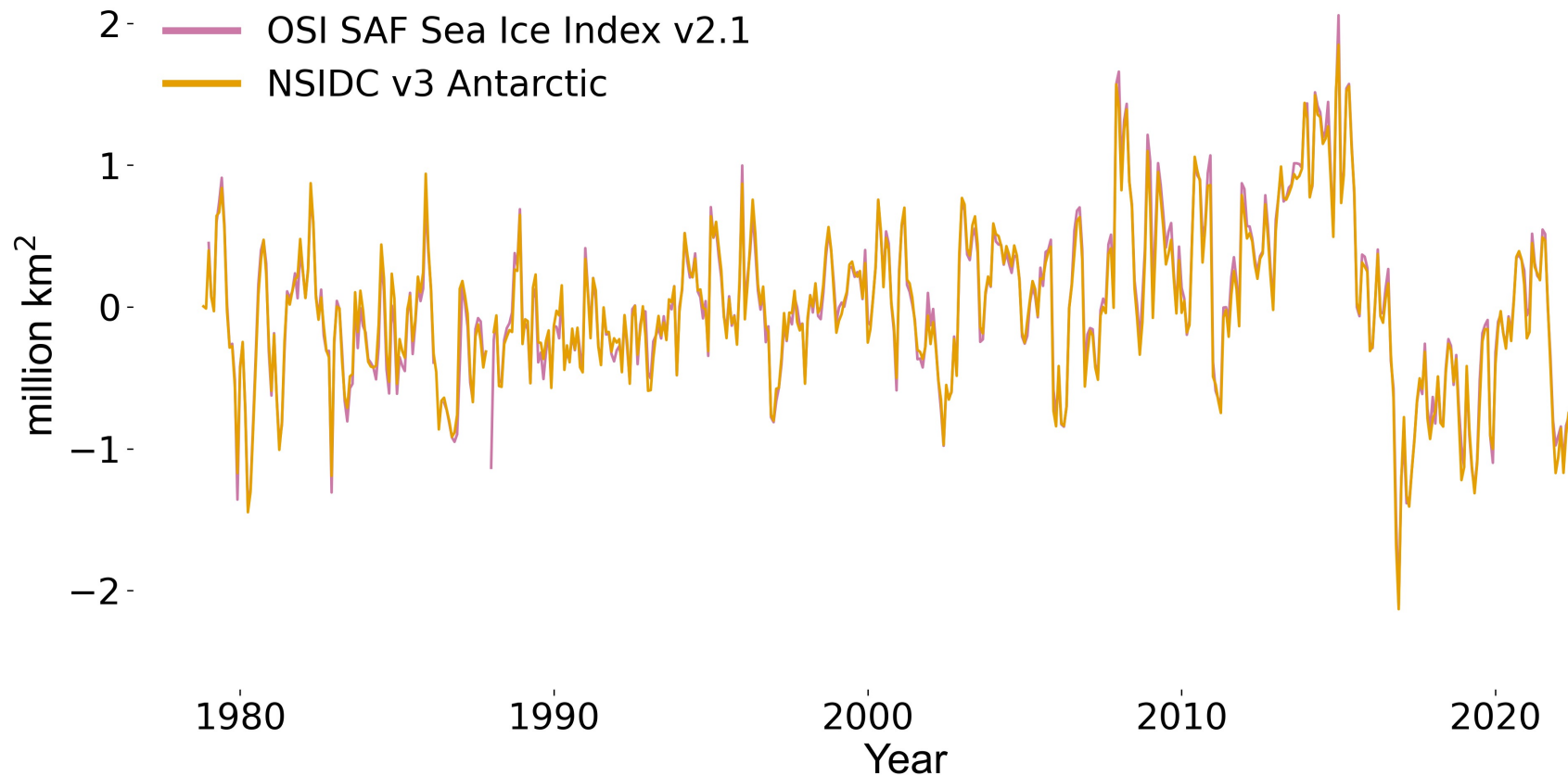
4th

5th

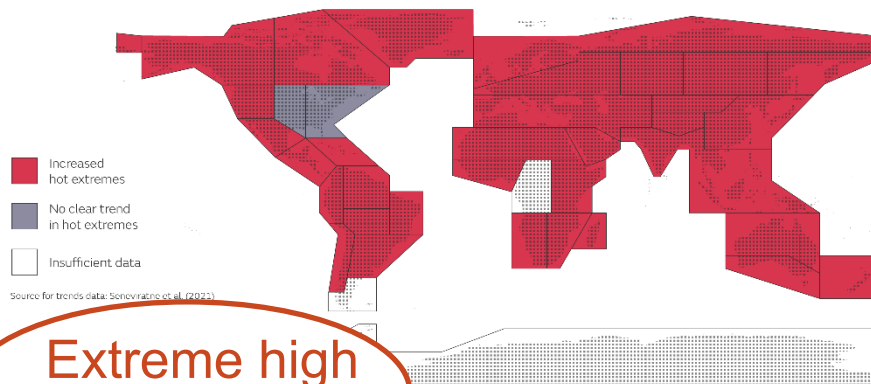
Berkeley Earth - Global - August



Antarctic sea-ice extent difference from 1981-2010 (million km²)



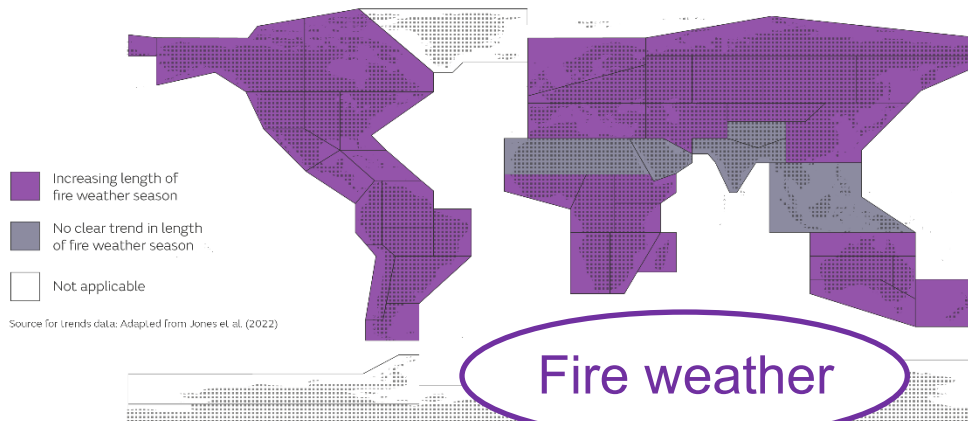
Drivers of international impacts: observed changes in extreme weather



Extreme high
temperatures

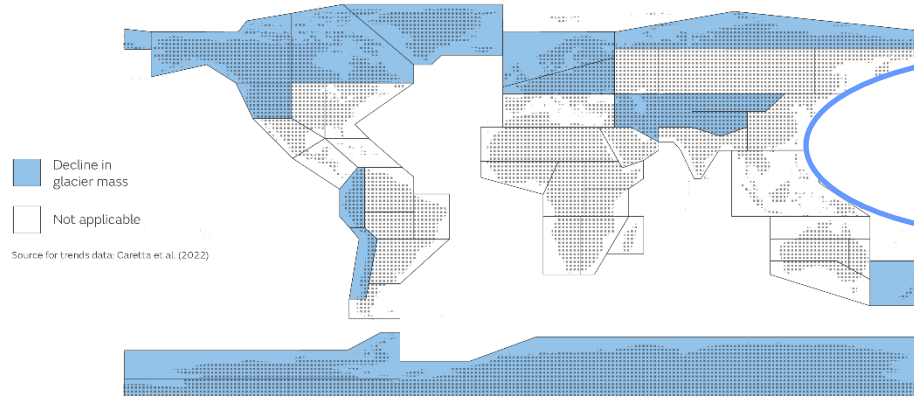


Heavy
precipitation



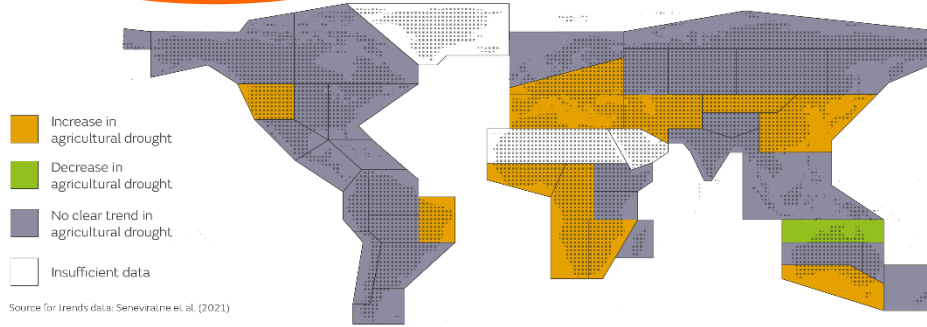
Fire weather

Drivers of international impacts: observed changes in water on land

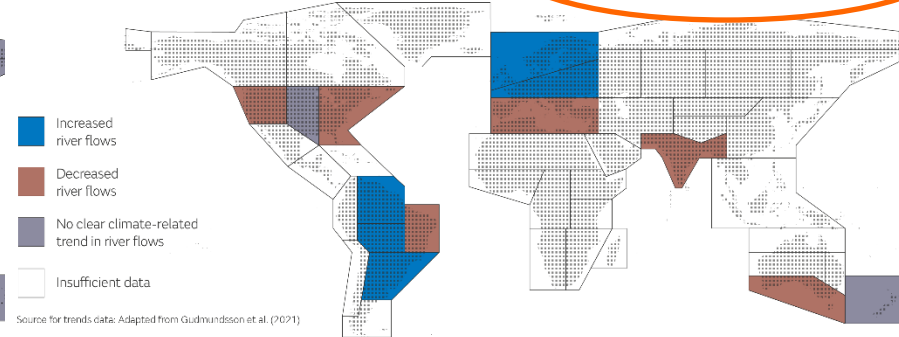


Melting glaciers

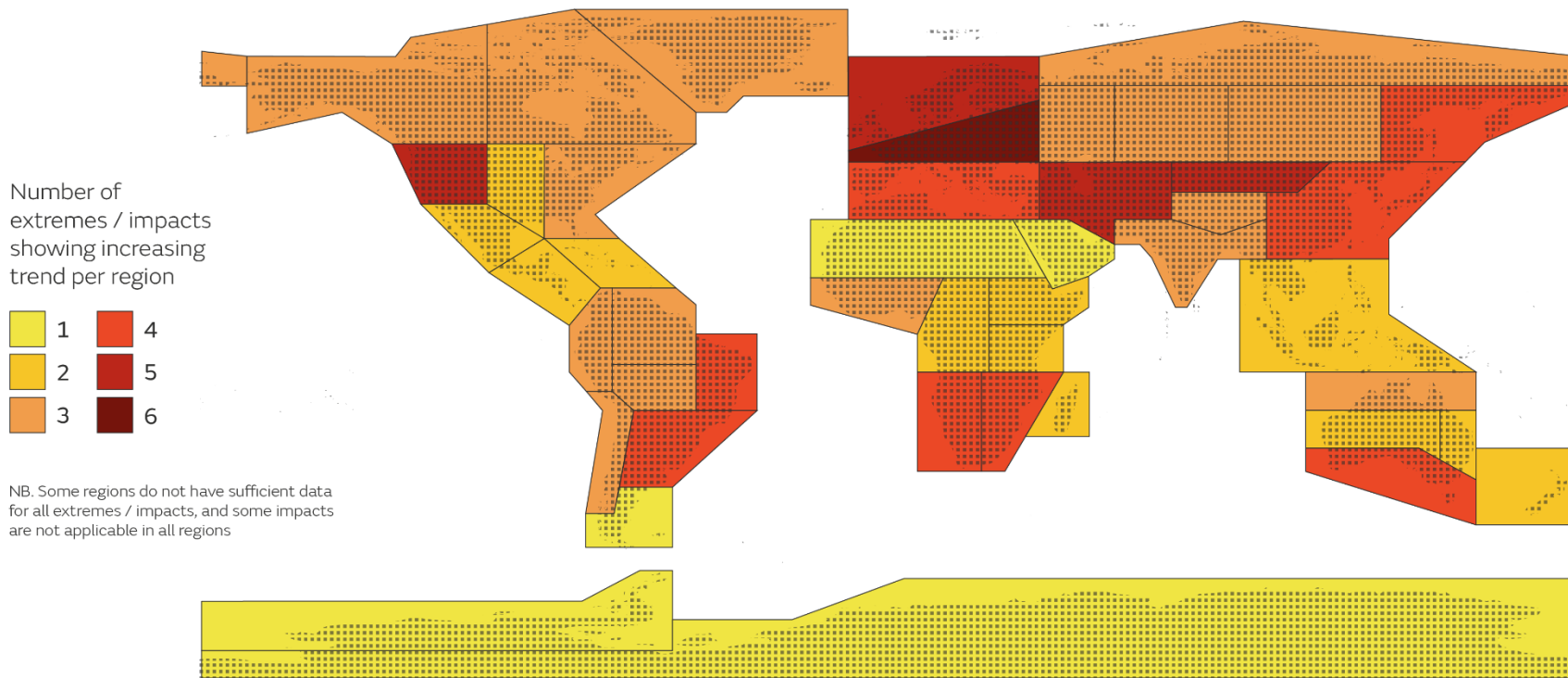
Agricultural drought



River flows



Every region on Earth is already experiencing impacts of climate change





UK Climate Risk
Independent
Assessment (CCRA3)

Technical Report

3rd UK Climate Change Risk Assessment (CCRA3)

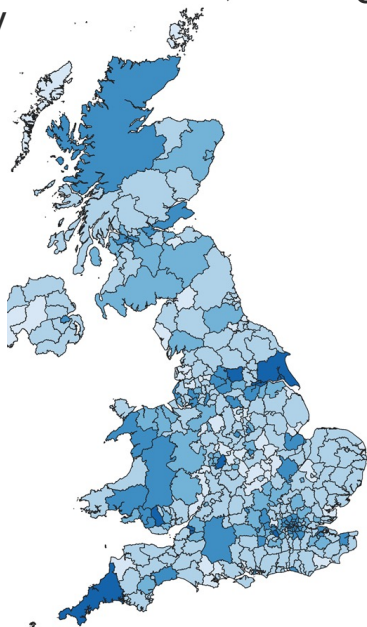
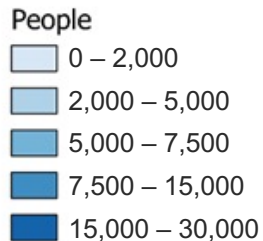


Climate Change Act 2008

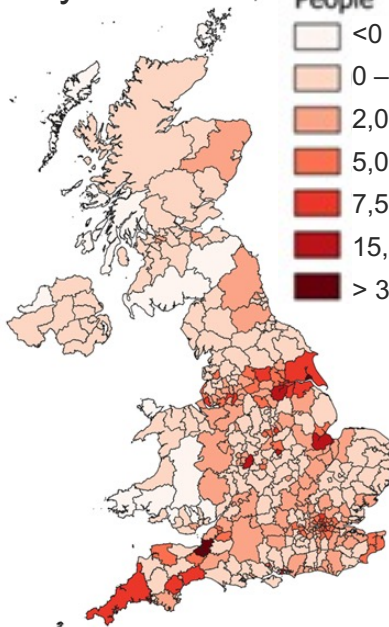
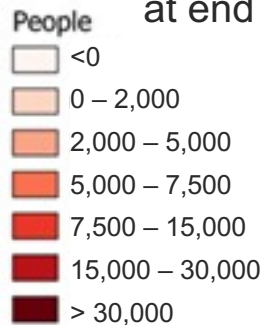


Current and projected future UK flood risk

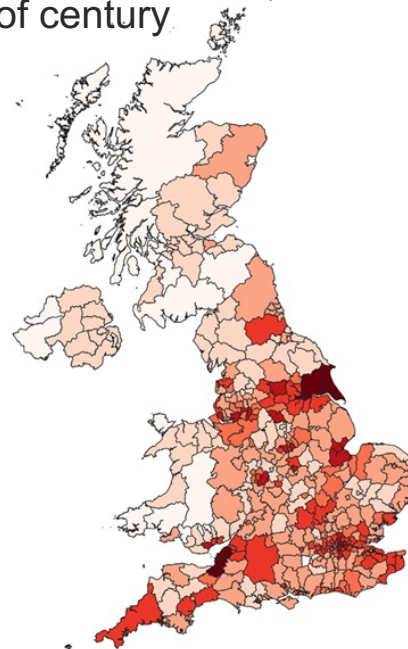
Present Day



2050s on a pathway to 2°C global warming by end of century



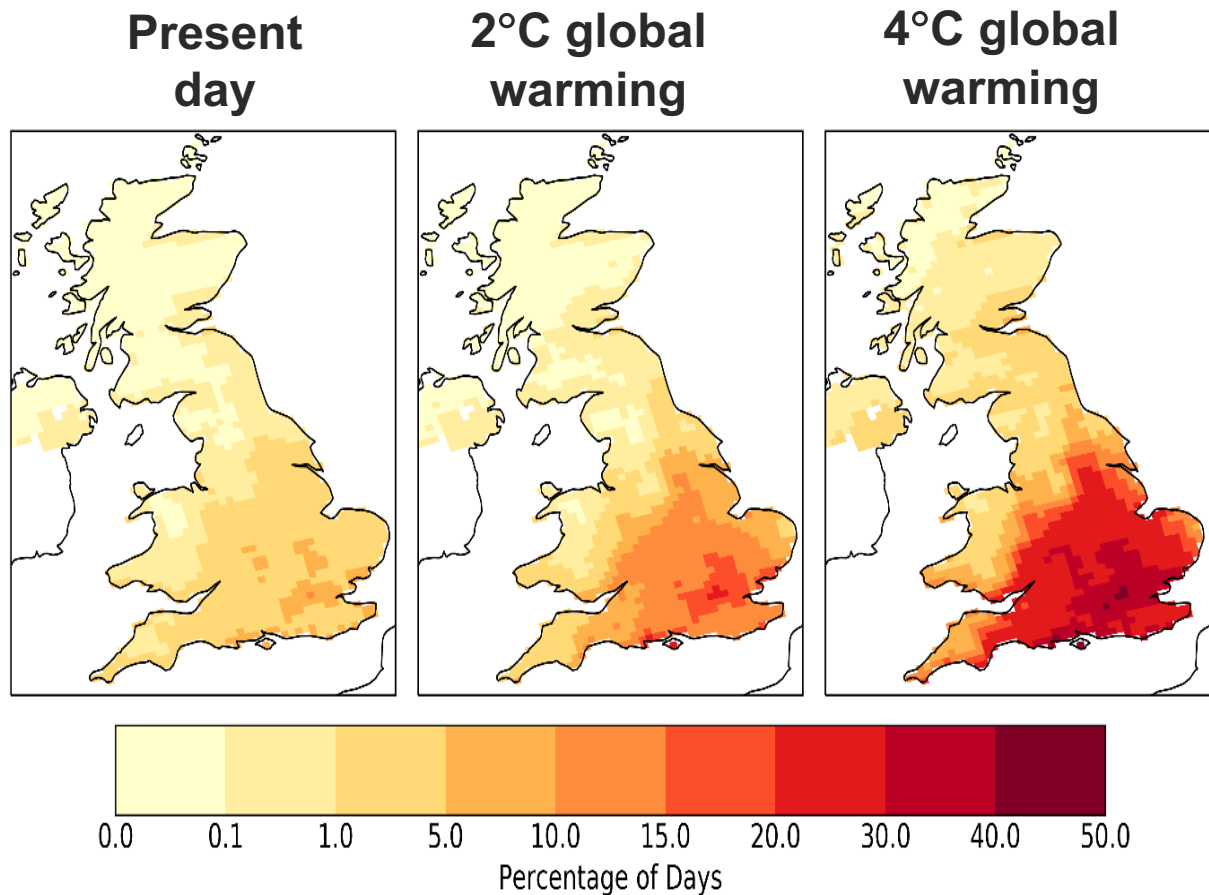
2080s on a pathway to 4°C global warming at end of century



19th July 2023



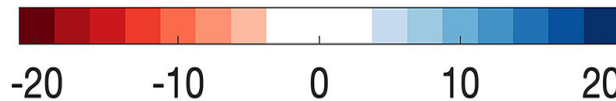
Wildfire risk:
percentage of
summer days with
Fire Weather Index
above “very high”



Tylerstown, Rhondda Cynon Taf
Feb 2020



Increasing rain and coal tip landslide risk in Wales



Observed annual precipitation change (%) per 1°C global warming

Categorising risks in CCRA3

Risk area	Number of risks assessed
Natural environment and natural assets	18
Infrastructure	13
Health, communities and built environment	13
Business and industry	7
International dimensions	10
TOTAL	61



Categorising risks in CCRA3

Risk area	Number of risks assessed
Natural environment and natural assets	18
Infrastructure	
Health, community and culture	
Business and the economy	
International relations	

**Only 7 risks / opportunities
assessed as not needing
additional action
at this time**



Categorising risks in CCRA3

Risk area	Number of risks assessed
Natural environment and natural assets	18
Infrastructure	
Health, community and social	
Business and the economy	
International relations	

**34 risks / opportunities
assessed as
more action needed**



Summary

- 2023 has seen many weather and climate extremes worldwide with an attributable impact of human-caused climate change
- Climate risks are projected to continue to increase in the UK
- New, previously unexpected risks are emerging
- The UK is deeply unprepared