

Realized Climate System Warming

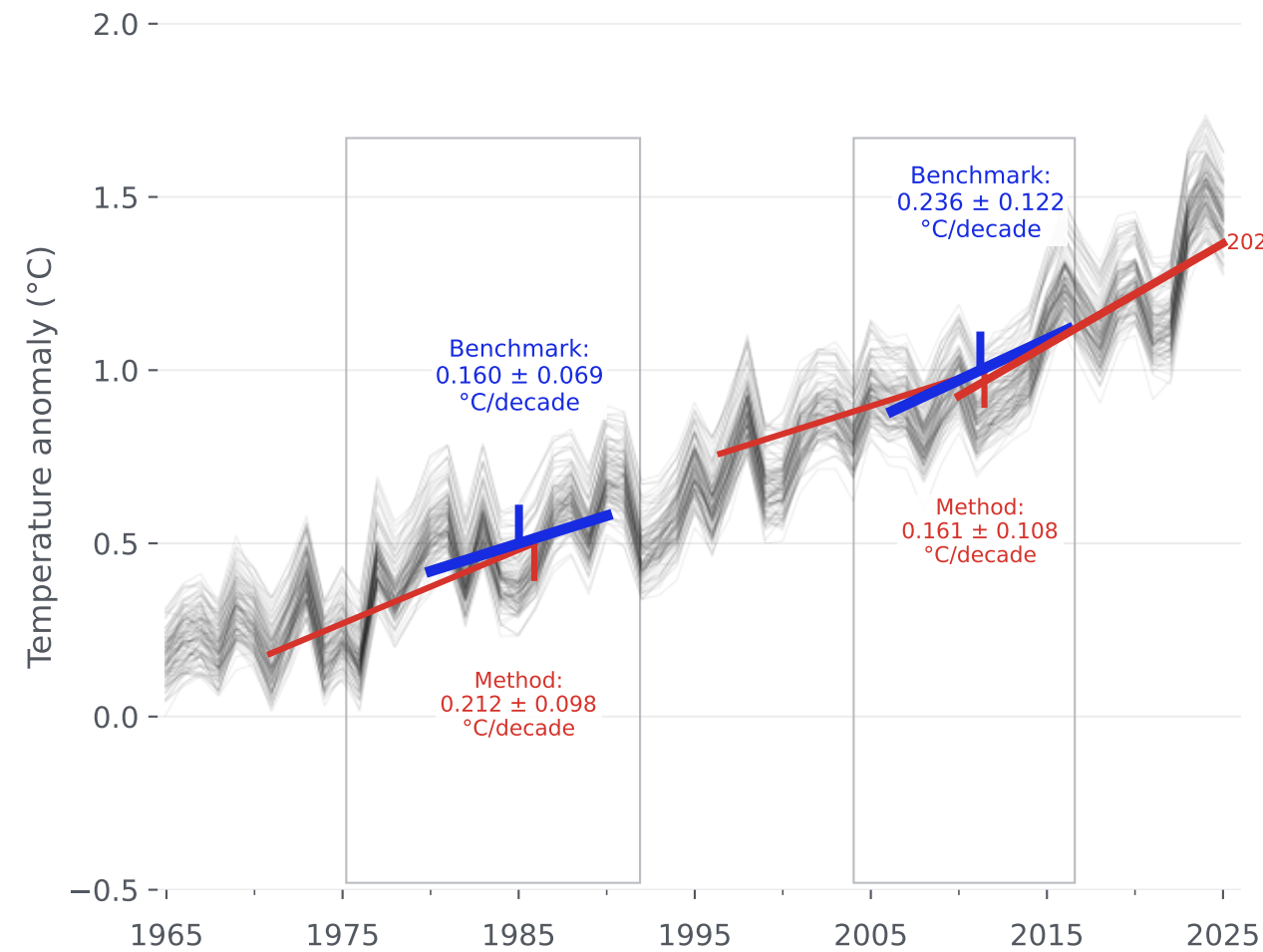
PIVW combination

Based on PIVW combination · calibration / anomaly reference: 1850–1900

Global warming levels and crossing times

0.5°C
1985
[1975–1992]

1.0°C
2011
[2004–2017]



Dark blue: definitive crossing + centered 10-year rate

Red: 15 years before selected method's predicted crossing

Red 2025 line: selected-method level and fitted recent rate

Data and methods: essd.copernicus.org/preprints/essd-2025-825/

Current (2025) realized global warming level

1.37 [1.23, 1.53] °C

95% uncertainty range

Estimated (2025) realized warming rate

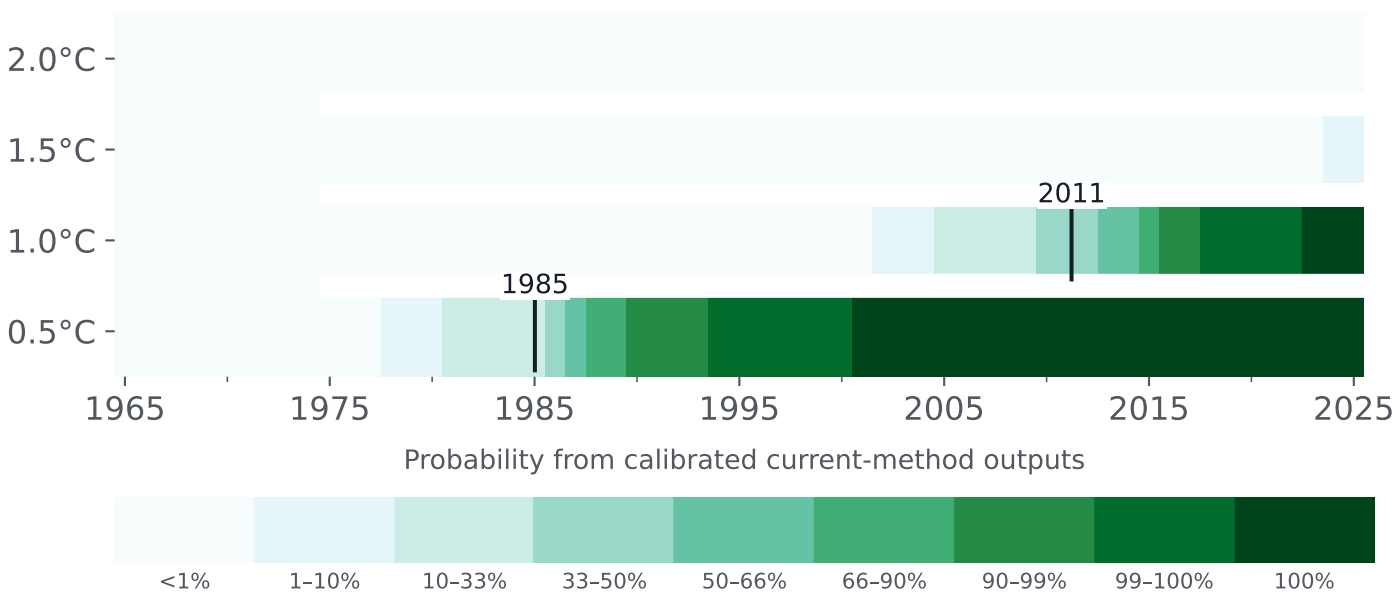
0.294 [0.228, 0.359] °C/decade

15-year quadratic endpoint fit · corrected retrospective 2011–2025 outputs

It is very unlikely that warming exceeds 1.5°C

2025 probability: 6.43% · relative to 1850–1900

Global warming levels and exceedance probabilities



Centered 20-year benchmark ends in 2015

1.0°C benchmark: 93 observed + 7 quartic estimates; model uncertainty excluded

Rate labels show ± 1.96 SE · 100 observational ensemble members