# State of the Global Climate 2023

**WORLD METEOROLOGICAL ORGANIZATION**

SUBJECT TO COPY EDIT

## TEMPERATURE

The global mean near-surface temperature in 2023 was 1.45 ± 0.12 °C above the 1850–1900 average. 2023 was the warmest year in the 174-year observational record, clearly surpassing the previous joint warmest years, 2016 at 1.29 ± 0.12 °C above the 1850–1900 average and 2020 at 1.27±0.13 °C.

The past nine years, 2015–2023, were the nine warmest years on record.

Record monthly global near-surface temperatures have been observed for the ocean – from April through to December – and, starting slightly later, the land – from July through to November.

The ten-year average 2014–2023 global temperature is 1.20±0.12°C above the 1850–1900 average, the warmest 10-year period on record.

Global mean near-surface temperature in 2023 was 1.45 ± 0.12 °C above the 1850–1900 average[8] (Figure 2). The analysis is based on a synthesis of six global temperature datasets (see Data set and methods). 2023 was the warmest year in the 174-year instrumental record in each of the six data sets. The past nine years – 2015 to 2023 – were the nine warmest years on record. The two previous warmest years were 2016 with an anomaly of 1.29 ± 0.12 °C, and 2020 with an anomaly of 1.27 ± 0.13 °C.

The second-highest margin by which a September record was broken in the past 60 years (the period covered by all datasets) was substantially smaller, at 0.03 to 0.17 °C in 1983. July is typically the warmest month of the year globally, and thus July 2023 became the warmest month on record.

The long-term increase in global temperature is due to increased concentrations of greenhouse gases in the atmosphere. The shift from La Niña, which lasted from mid-2020 to early 2023, to fully developed El Niño conditions by September 2023 (see Short-term climate drivers) likely explains some of the rise in temperature from 2022 to 2023. However, some areas of unusual warming such as the Northeast Atlantic (Figure 3) do not correspond to typical patterns of
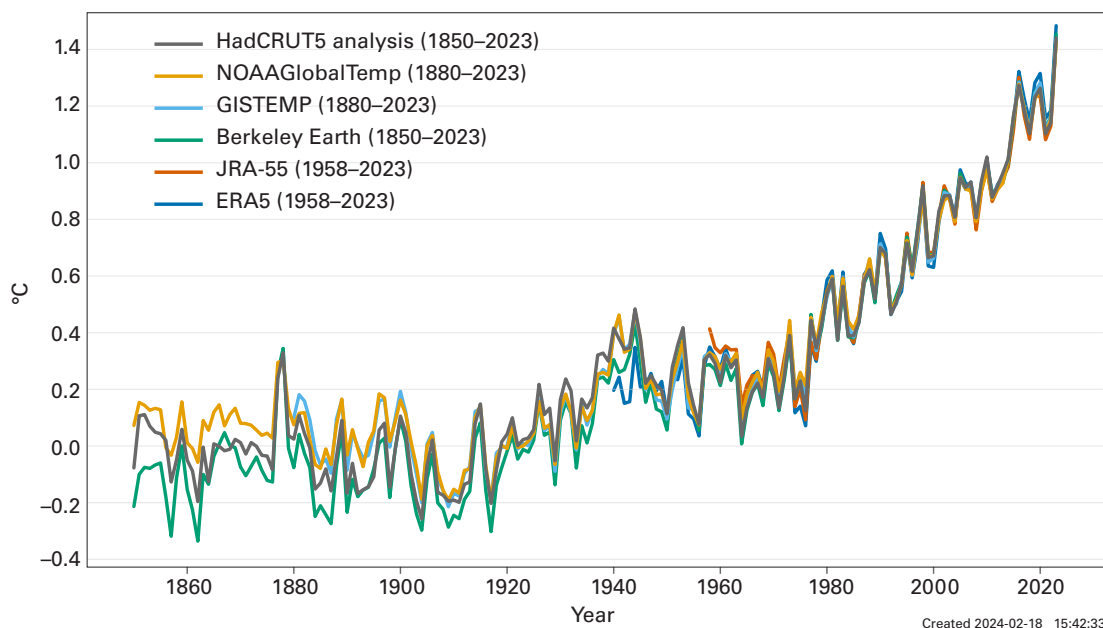


Figure 2. Annual global mean temperature anomalies (relative to 1850–1900) from 1850 to 2023. Data are from six data sets as indicated in the legend, see Data set and methods for details.