Climate Information for Decision-Making

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International Workshop on “Combating Climate Change: Mitigation and Adaptation”

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What is WMO?

- The UN Specialized Agency for weather, climate and water
- Has 193 Member States and Territories
- Support resilience and sustainable development of all nations
- Defines best practice and sets international standards for weather and climate
- WMO and UNEP established IPCC in 1988

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What are climate services

- Climate services are the provision and use of climate information to assist decision-making

- Climate information is becoming increasingly important and relevant for decision-making across society

- Recognised in 2009 at World Climate Conference-3. Heads of States, governments, industry, and scientific experts called for better collaboration and coordination under a *Global Framework for Climate Services*

WMO OMM

WMO Climate Reports

Annual, and mid-year Update for COP

Decadal

Global reports

State of the Climate

Five Regional reports

State of Climate Services

ENSO & Multiannual forecast


WMO El Niño/La Niña Update

SEPTEMBER 2024

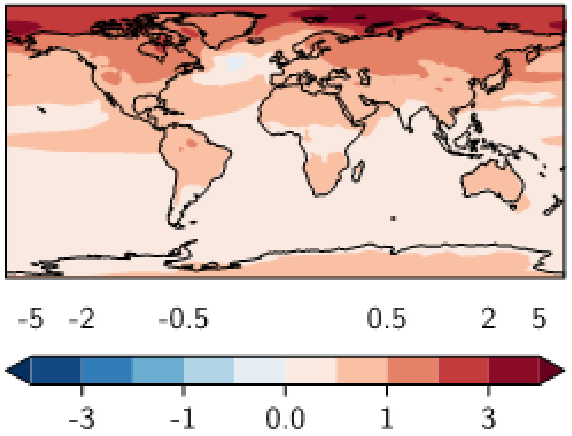
ESTIMATED ENSO PROBABILITIES FOR SEPTEMBER- NOVEMBER 2024

- ~0% El Niño
- ~45% ENSO-Neutral
- ~55% La Niña

- As of mid-August 2024, the tropical Pacific remains in a neutral state of the El Niño–Southern Oscillation (ENSO).
- Expert assessment of model forecasts indicates around 55% chance for transition to La Niña in September–November, increasing to 60% for the period October 2024 through February 2025.
- The chance of ENSO neutral conditions persisting over September–November is estimated at 45% and 40% thereafter.
- The chance of El Niño developing is negligible.

Information on ENSO should be combined with other regionally and locally relevant factors in order to anticipate its effects on regional climates.

For the latest update, visit: https://wmo.int/topics/el-nino-la-nina



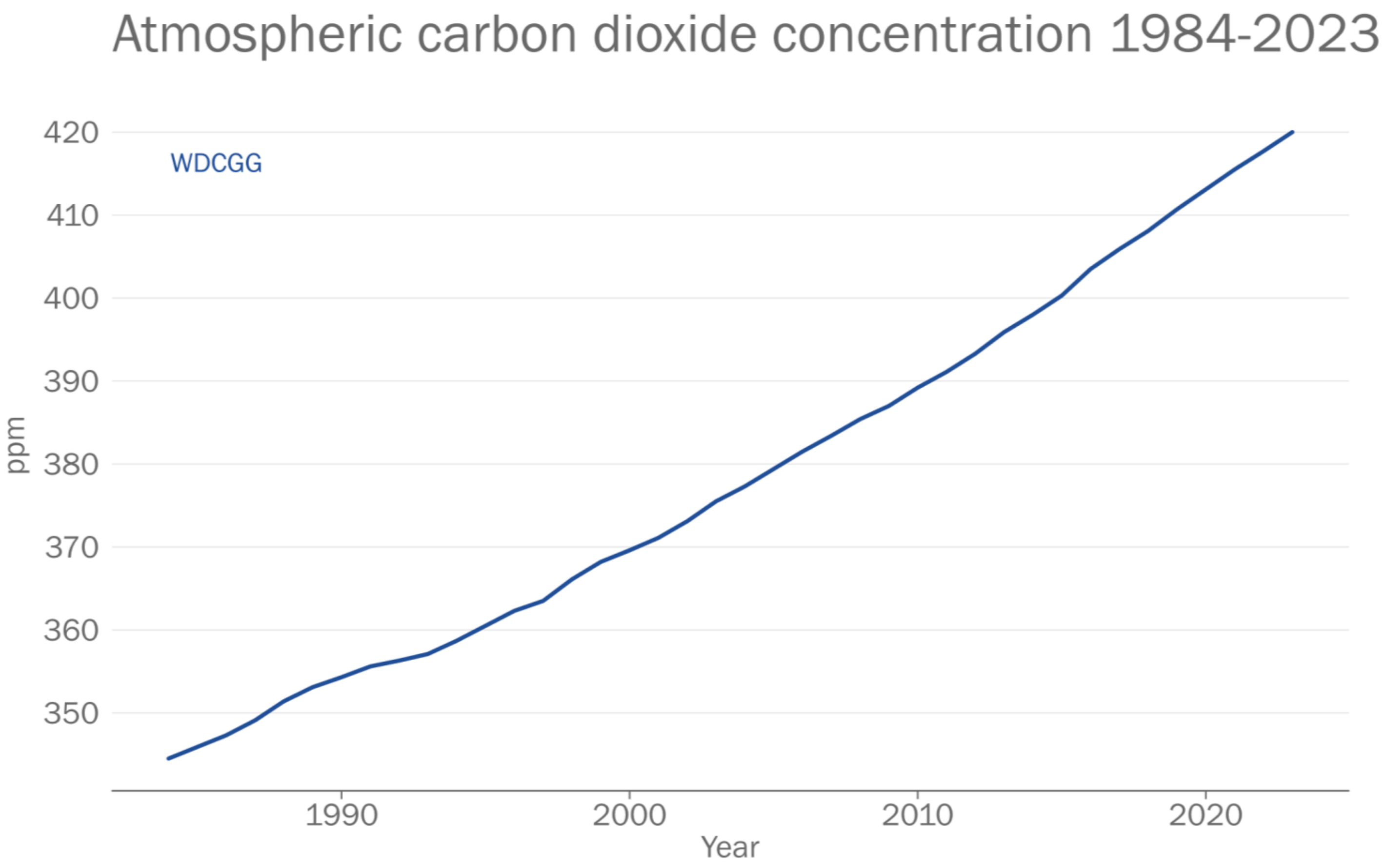
WMO OMM

State of the Climate 2024

Released on 19 March 2025

In 2023 atmospheric CO_2, methane and nitrous oxide reached the highest levels in the last 800 000 years.

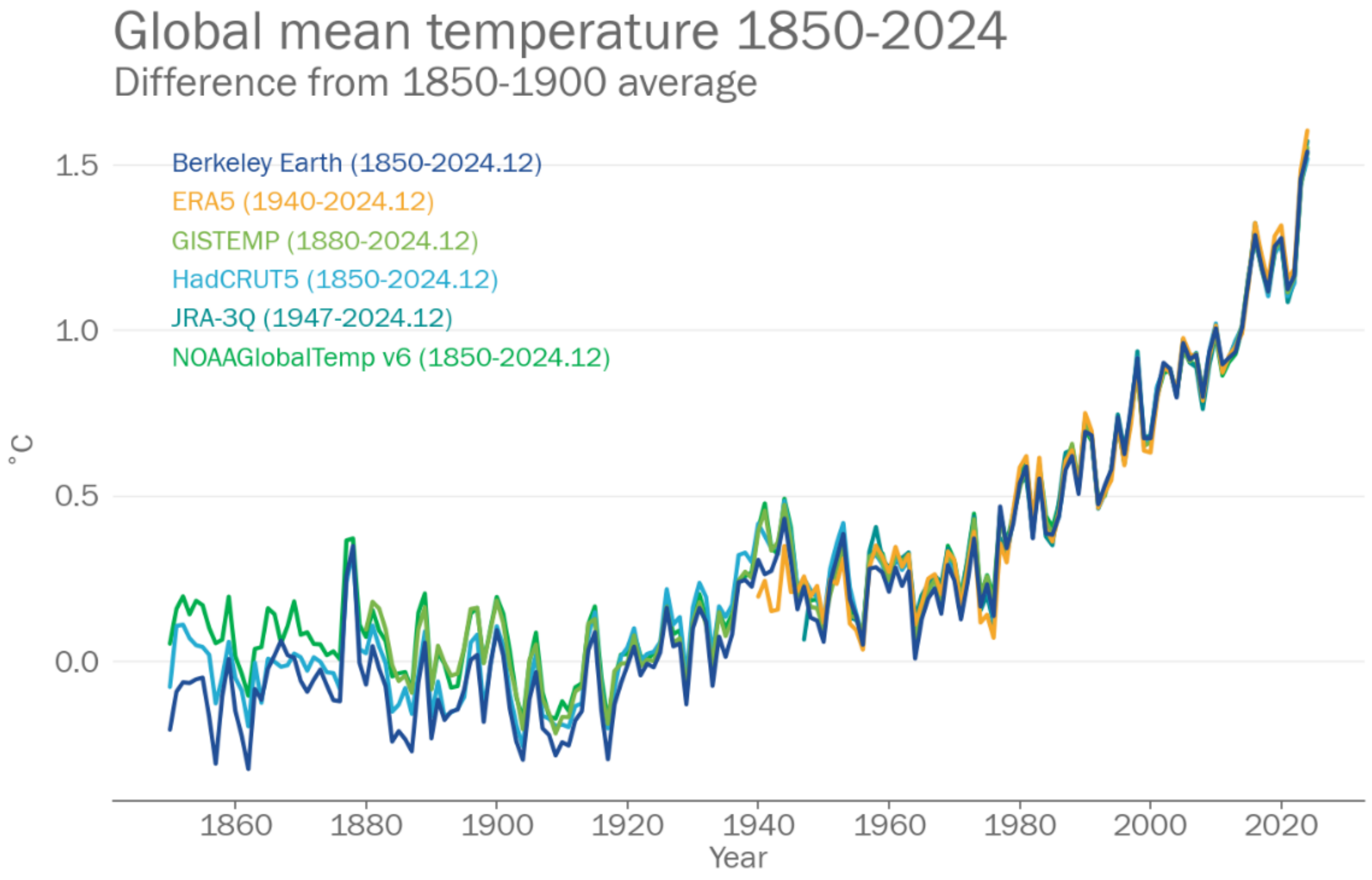
Note: 2023 is the most recent year with consolidated global annual figures



2024 was the warmest year on record

1.55 ± 0.13 °C

above the 1850-1900 average.



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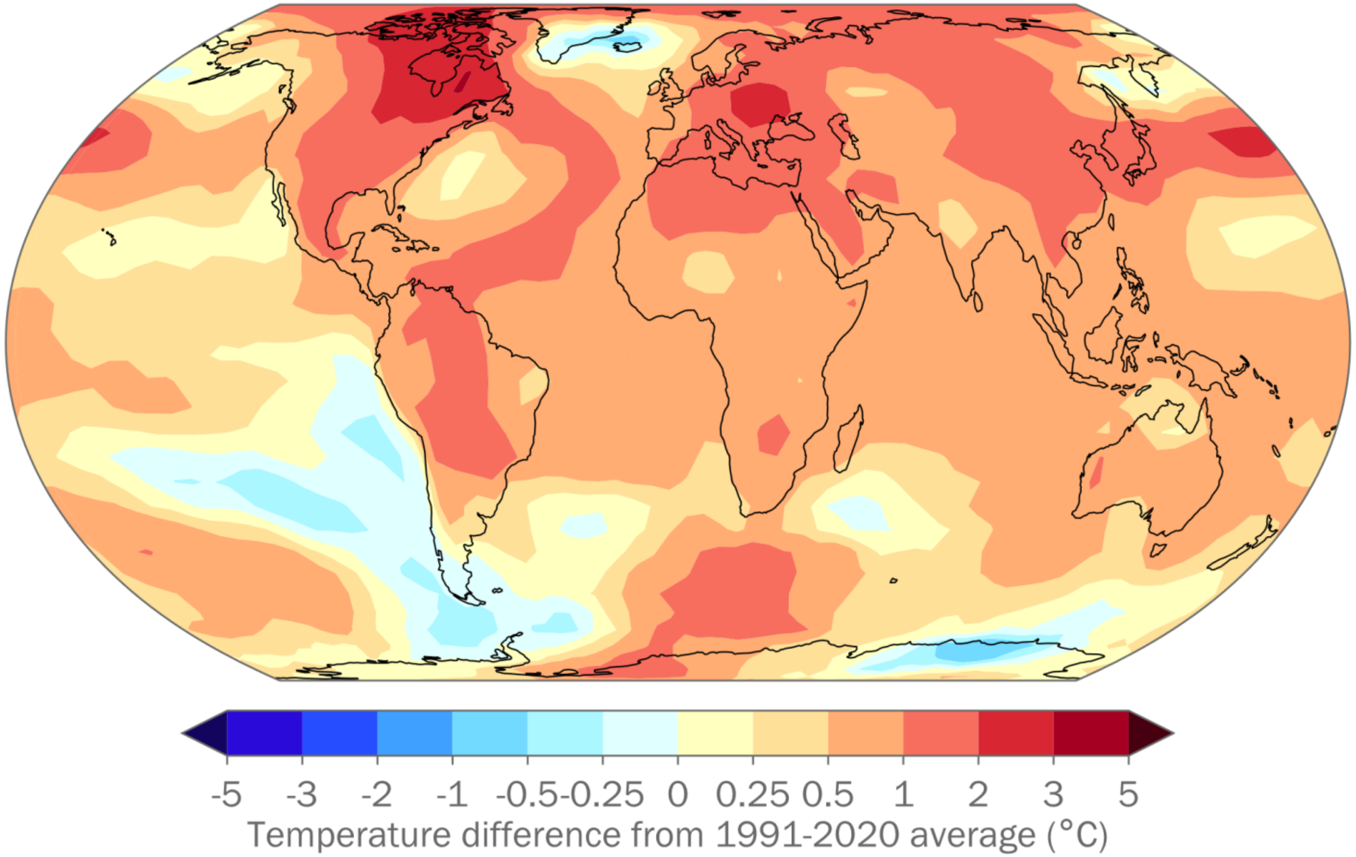
Annual average temperature anomalies for 2024 compared to the 1991-2020 average.

The warm temperatures extended over wide areas



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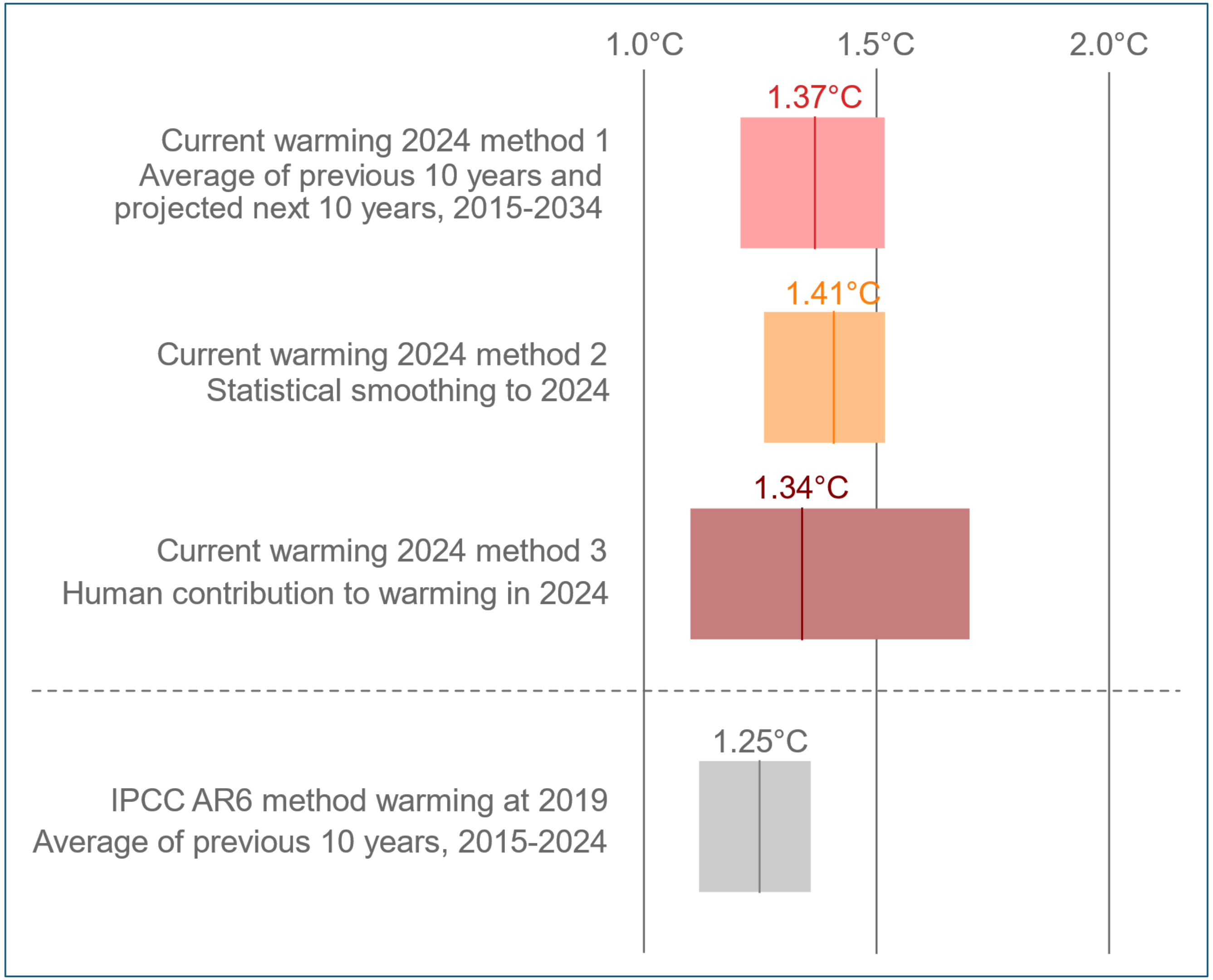
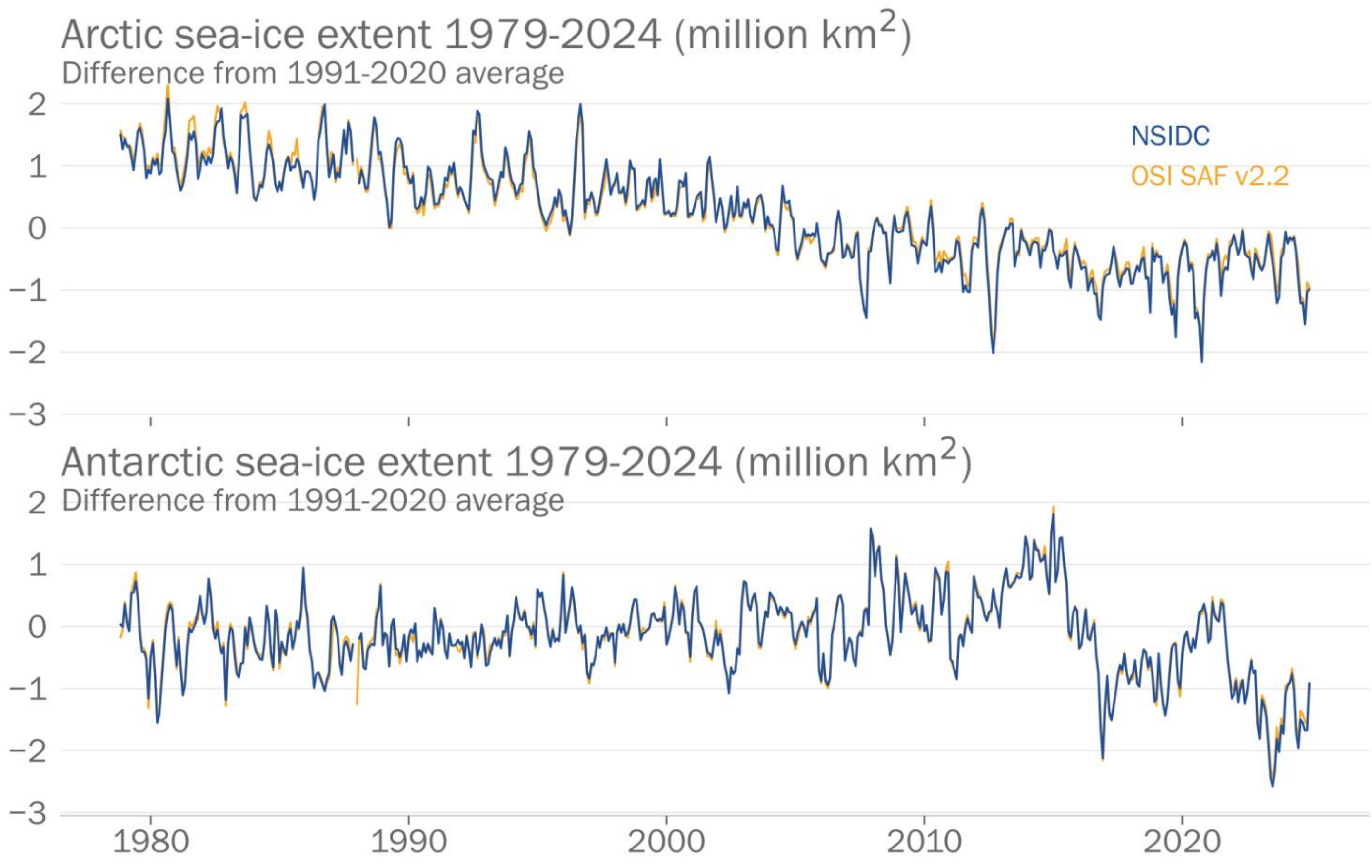
Paris Agreement, Article 2: Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change

- One year above 1.5°C does not mean the level mentioned in the Paris Agreement has been exceeded
- WMO has established an international team of experts to define a metric
- Best estimates of long-term global warming remain below 1.5°C



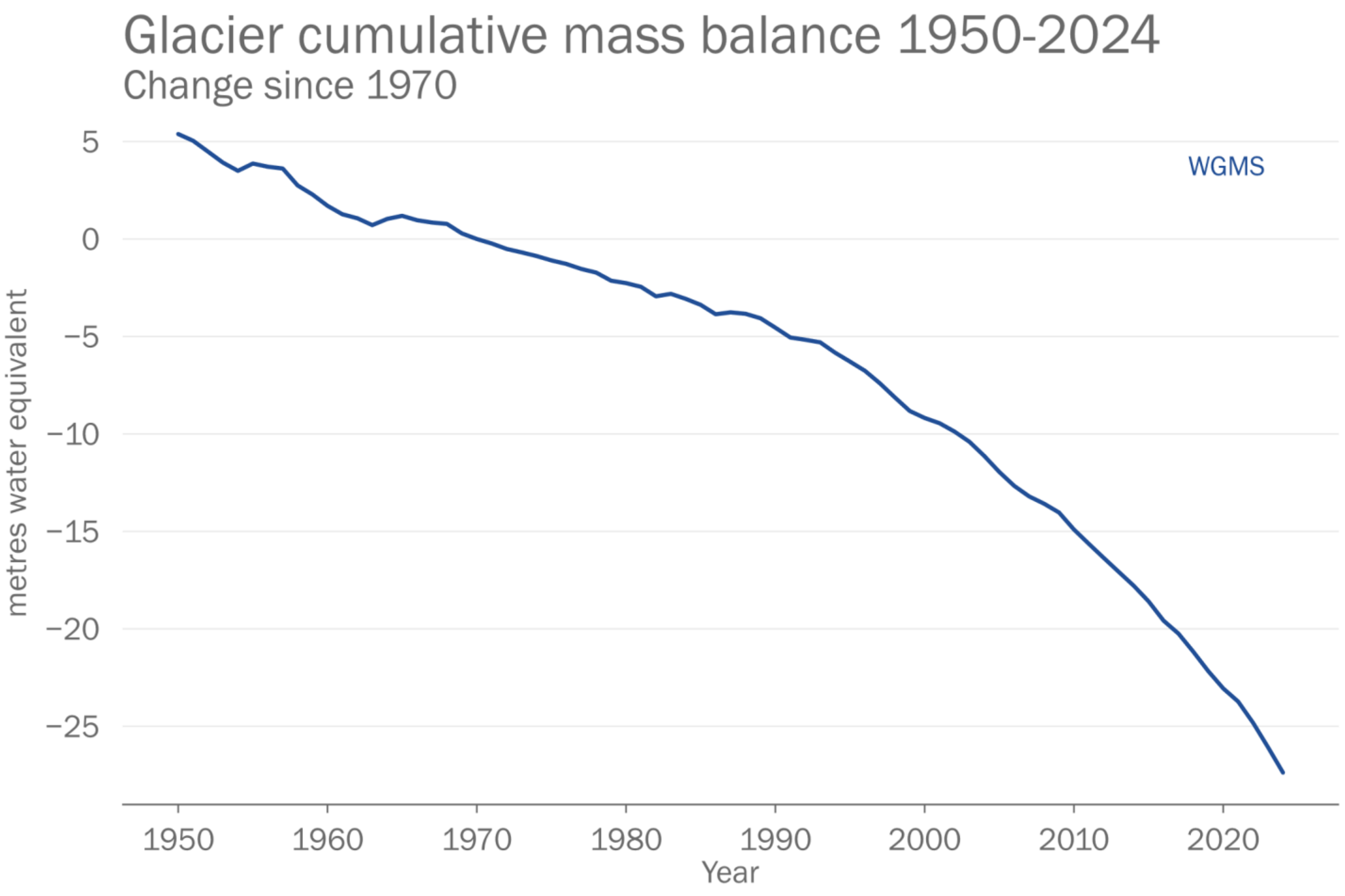
Arctic & Antarctic sea ice extent were both below average in 2024.

The annual minimum and maximum of Antarctic sea-ice extent were each the second lowest in the observed record.



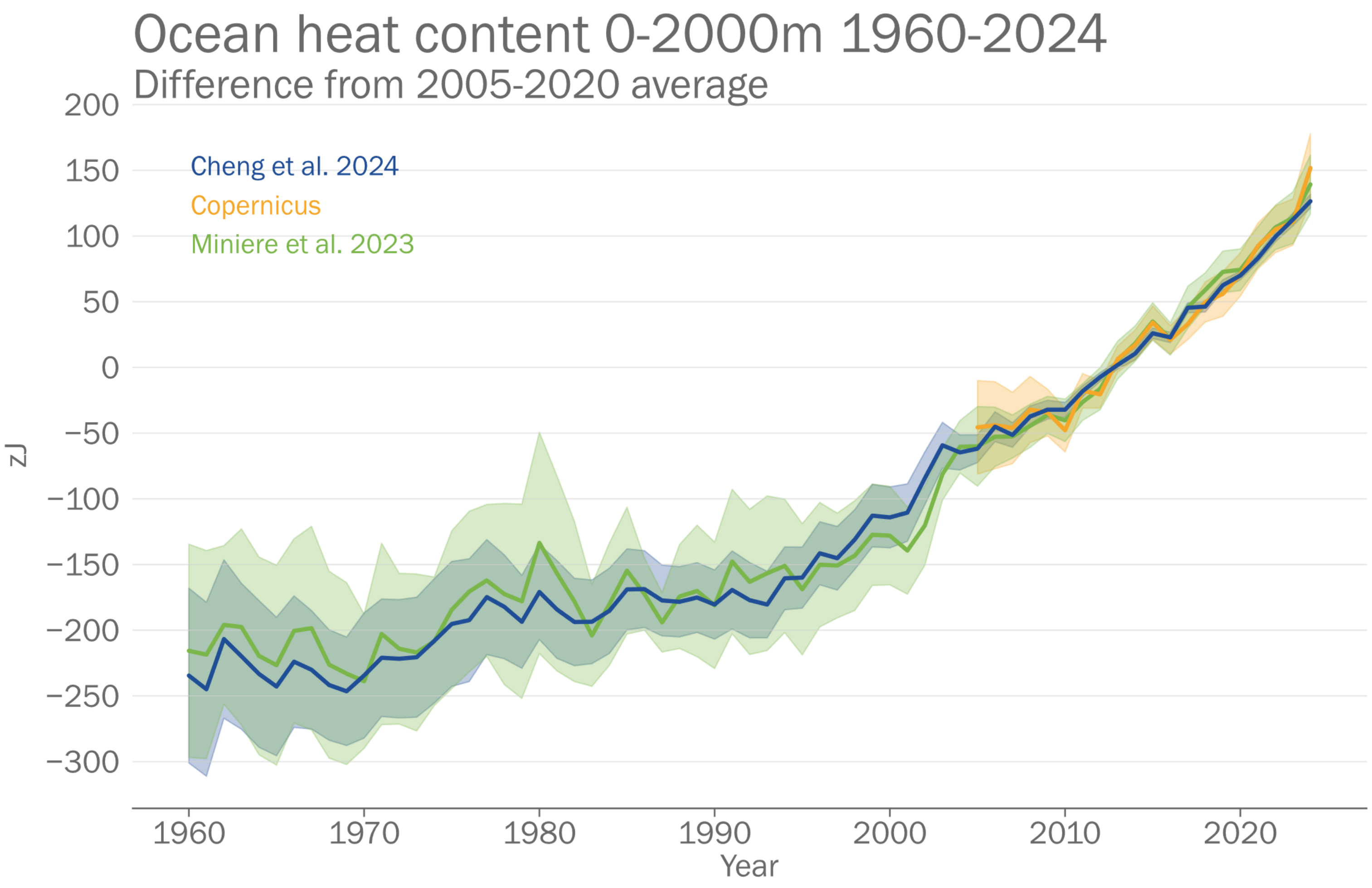
Glacier mass loss from 2021-2024 was the most negative three-year glacier mass balance on record.

Exceptional losses were experienced in Norway, Sweden, Svalbard and the tropical Andes.



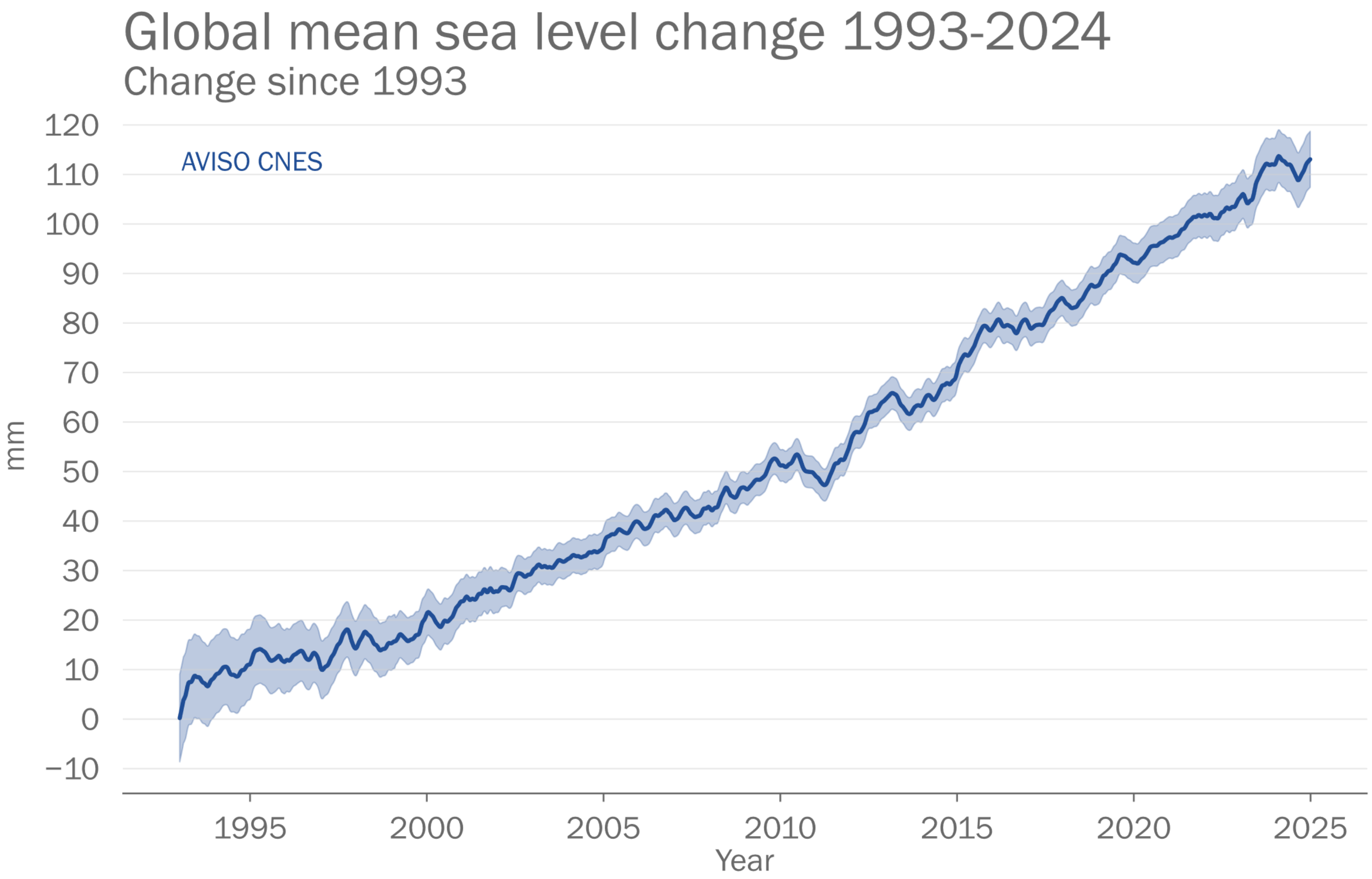
In 2024, ocean heat content reached the highest level in the 65-year observational record.

The rate of warming from 2005–2024 is more than twice that observed from 1960–2005.



In 2024, global mean sea level reached a record high in the satellite record.

From 2015-2024, sea level rose at an annual rate of 4.7mm, compared to 2.1mm from 1993-2002.



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Wildfires in Canada
Floods in Valencia, Spain
Heatwaves Europe, SE Asia, Middle East
Cold and Snow in Pakistan, Afghanistan, Iran
Hurricane Helene and Hurricane Milton
Heavy rain and floods, Sahel and East Africa
Typhoon Yagi
Drought in Central and South America
Drought in southern Africa
Flooding in Brazil
Cyclone Chido
Wildfires in Chile
Low Antarctic Sea-ice Extent

- Extreme Heat causes the greatest mortality of all extreme weather
- An estimated 489,000 yearly heat-related deaths globally from 2000-2019, with 45% of these in Asia and 36% in Europe
- Heatwave mortality could be 30x times higher than recorded
- Heat warnings are provided in only half of world's countries, and only 26 countries have climate-informed heat-health early warning systems
- **Early warnings and climate services are vital to protect communities and economies.**

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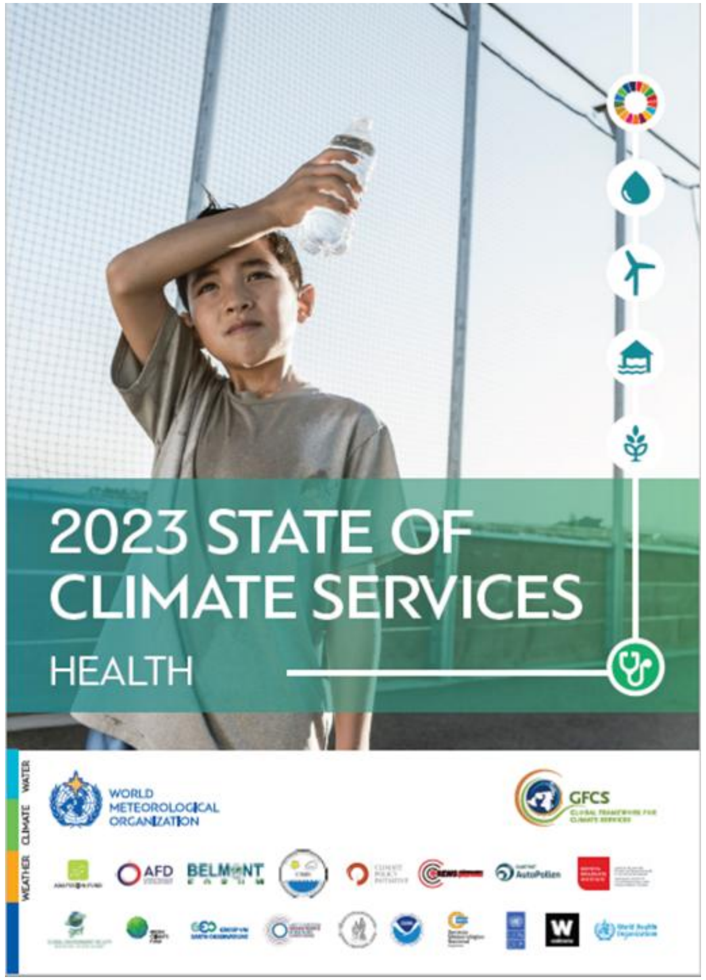

Early Warnings for All

GFCS
GLOBAL FRAMEWORK FOR CLIMATE SERVICES

Thank you

Additional resources:

[State of the Climate 2024]

[Interactive Report]

[Data Dashboard]

[IPCC Projections]

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