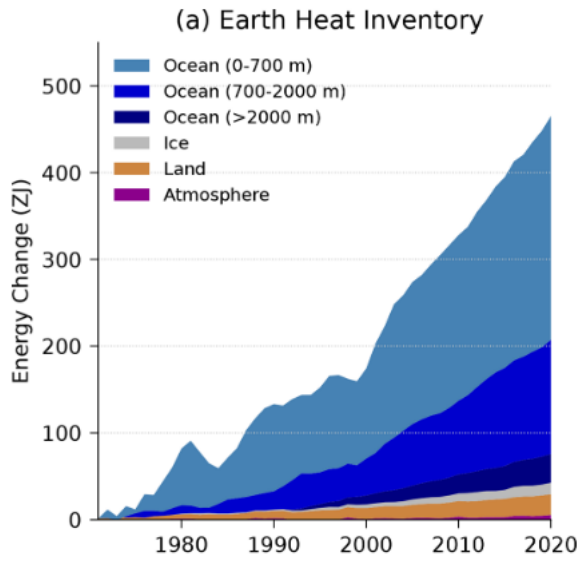
Press Release, June 8, 2023

New Indicators Project for Tracking Our Changing Climate

Today, leading scientists that contributed to the recent IPCC report of working group 1 on climate change have launched a project to update key climate indicators every year so people can be kept informed about critical aspects of global warming. As a partner of this project, Mercator Ocean International (MOi) contributes expertise to finding the Earth Energy Imbalance (EEI), the primary indicator used to understand the extent of human-induced global warming, which has more than doubled in the last two decades. The EEI is directly related to ocean heat because the ocean absorbs some 90% of the human-driven heat trapped in the Earth system.

Key Findings of Project Paper

We live in a rapidly changing climate, and we rely on key indicators of the state of the Earth system that help us assess the impact of human activities to make informed decisions. As Mercator Ocean transitions into an intergovernmental organisation, it responds the pressing call from European countries, the European Commission, United Nations frameworks, and the international community for reliable, timely, and accessible ocean data, indicators, and predictions to support the needs of countries worldwide. Mercator produces a suite of Ocean Monitoring Indicators across its programmes and initiatives and sees this as a top priority to meet the needs of policymakers to make evidence-based decisions for Ocean sustainability and governance.

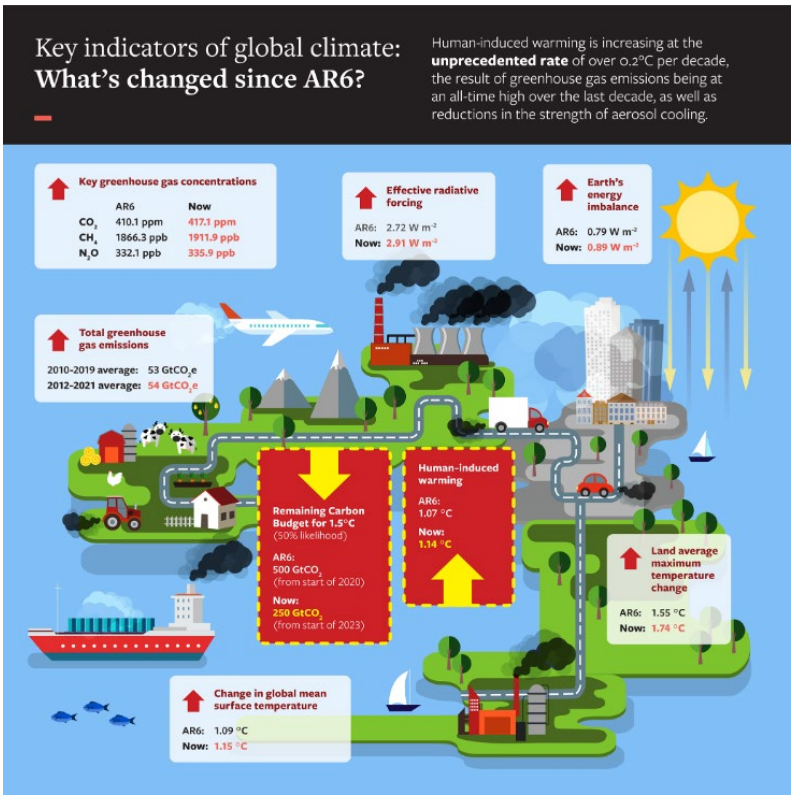


Caption: Observed changes in the Earth heat inventory for the period 1971–2020, with component contributions as indicated in the figure legend. Source: "Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and human influence", published in the Earth System Science Data.

The reports and assessments of the Intergovernmental Panel on Climate Change (IPCC) are relied upon as the authoritative scientific evidence for climate negotiations held under the United Nations Framework Convention on Climate Change (UNFCCC). This includes the initial global stocktake carried out under the Paris Agreement, which is scheduled to conclude at COP28 in December 2023. However, these IPCC reports are only published every 5-10 years, giving way to possibility in gaps in information and sometimes not keeping pace with rapid changes we are experiencing in the Earth system.

In this initiative led by the University of Leeds, scientists have developed an open data, open science platform - the Indicators of Global Climate Change. It has been launched with an associated website and paper. They have committed to annually updating information on key climate indicators. Dr. Karina von Schuckmann, oceanographer specialized in Ocean climate

monitoring at MOi, has contributed to this project with the Earth heat inventory and ocean warming indicators, co-lead with Dr. Matt Palmer of the University of Bristol.



Caption: Infographic associated with headline results in Table 9 of full paper. "AR6" refers to the values published in 2011, and "Now" refers to 2022. The AR6 period total emissions are our re-evaluated assessment for 2010–2019. For details and uncertainties, see Table 9 in the full publication. Source: "Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and human influence", published in the Earth System Science Data.

Greenhouse gas emissions at 'an all-time high'- causing an unprecedented rate of global warming, say scientists

- **Human-induced warming averaged 1.14°C over the last decade**
- **A record level of greenhouse gases is being emitted each year, equivalent to 54 billion tonnes of carbon dioxide**
- **The remaining carbon budget - how much carbon dioxide can be emitted to have a better than 50% chance of holding global warming to 1.5°C - has halved over *three years***
- **Successive increases in EEI for each 20-year period since 1973, with an estimated value of 0.44 [0.05 to 0.83] Watts per square metre during 1973-1992 that almost doubled to 0.82 [0.60 to 1.04] Watts per square metre during 2003-2022.**
- **In the most recent decade, EEI was larger again at 0.91 [0.56 to 1.26] Watts per square metre**

As the information and indicators produced as a part of this project are traceable to IPCC report methods, they can be trusted by all parties involved in UNFCCC negotiations and help convey wider understanding of the latest knowledge of the climate system.

Important Links

- *Indicators of Global Climate Change 2022: annual update of large-scale indicators of the state of the climate system and human influence*, published in the Earth System Science Data. Earth Syst. Sci. Data, 15, 1–33, 2023 https://doi.org/10.5194/essd-15-1-2023
- Climate Change 2021: The Physical Science Basis, IPCC 6th assessment report, Working Group 1
- Press event: Presented by the University of Leeds: Indicators of Global Climate Change, 08. June 2023 at 12:00 CEST
- Global Warming and the Ocean: a new study led by Mercator Ocean International expert sheds light on the Earth's Energy Imbalance
- WMO State of the Global Climate 2022: Mercator Ocean expertise contributes
- Global sea surface temperatures reach record high

About Mercator Ocean International

Mercator Ocean International (MOi) is a non-profit organisation in the process of becoming an intergovernmental organisation and is committed to building a science-based Digital Ocean for supporting the conservation and the sustainable use of our oceans and seas.

MOi delivers an operational digital description of marine environments worldwide and helps organisations implement community and institutional programmes, projects and initiatives. Mercator Ocean continuously fosters interactions between scientists, policymakers, public and institutional decisionmakers as well as civil society.

At the One Ocean Summit organised by France in Brest in February 2022, six European states (France, Italy, Norway, Portugal, Spain, and the UK) showed commitment to developing European oceanographic excellence by transforming MOi into an intergovernmental body by 2025 through the "Brest Declaration".

Led by Director-General Pierre Bahurel, MOi is based in Toulouse, France and has over 100 employees.

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