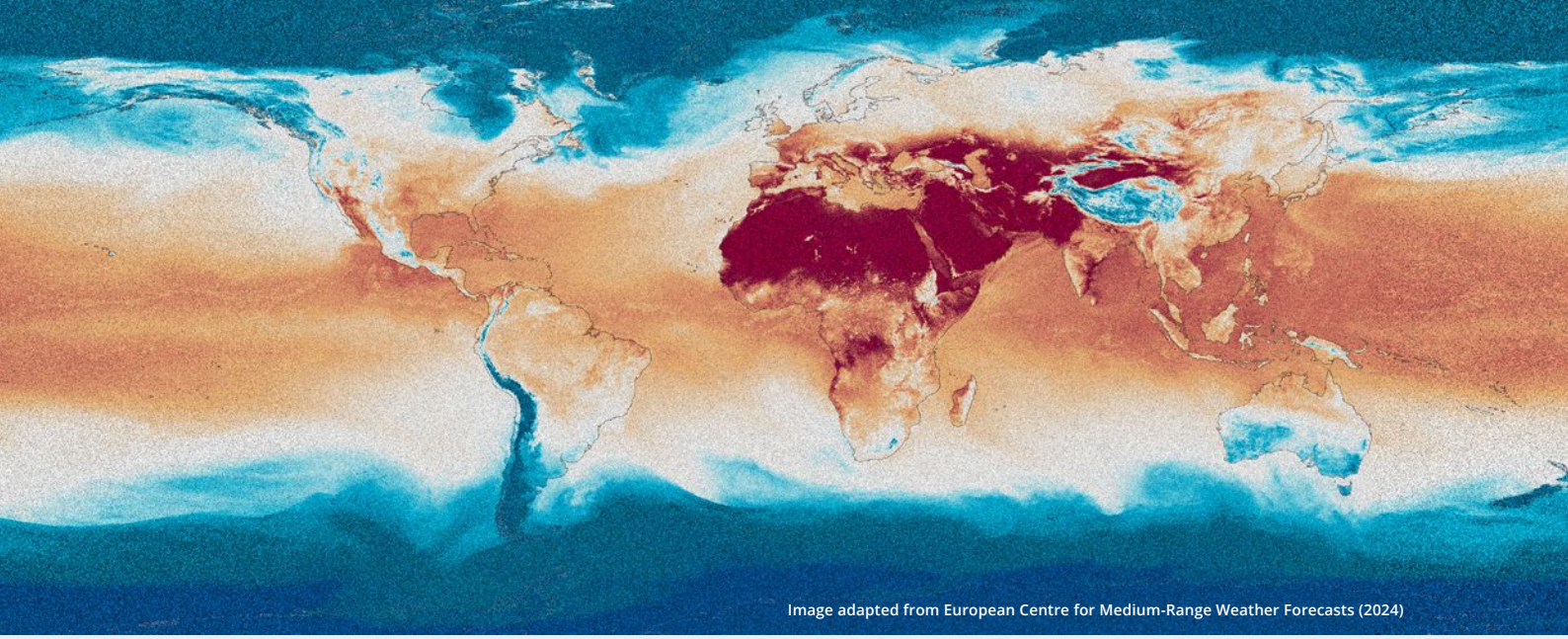


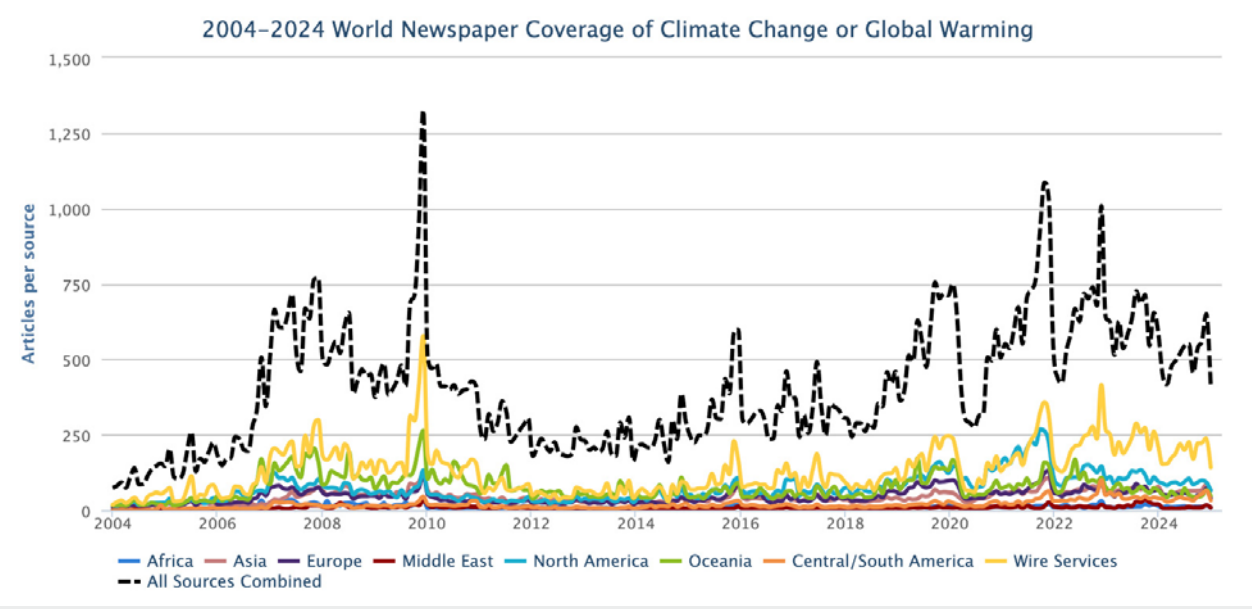
Image adapted from European Centre for Medium-Range Weather Forecasts (2024)

MeCCO
Media and Climate Change Observatory

A REVIEW OF MEDIA COVERAGE OF CLIMATE CHANGE AND GLOBAL WARMING IN 2024

SPECIAL ISSUE 2024

MeCCO monitors 131 sources (across newspapers, radio and TV) in 59 countries in seven different regions around the world.



Media and Climate Change Observatory, University of Colorado Boulder
mecco.colorado.edu

University of Colorado Boulder

CIRES

MeCCO SPECIAL ISSUE 2024

A Review of Media Coverage of Climate Change and Global Warming in 2024

2024 has been another pivotal year when climate change and global warming fought for media attention amid largely tumultuous, competing and intersecting stories around the globe. Climate-related issues, events, and developments garnered coverage through intersecting political, economic, scientific, cultural as well as ecological and meteorological themes.

This is our 8th year end report though our monitoring began just over 17 years ago and we have looked at coverage tracking back 25 years to January 2000 in several news outlets. This 2024 retrospective captures the ebbs and flows of media attention paid to climate change around the world while appraising the content covered as we also pull together the year's monthly summaries from January through December (issues 85-96). Check out our previous year-end reports and **monthly explainers here**. These assessments uniquely provide guidance on the quantity and quality of news coverage on climate change and global warming across the globe, and across regions and several countries around the world. There is no other media monitoring collaboration like this anywhere else on the globe.

Washington Post president and publisher Philip Graham once posited, "News is a first rough-draft of history". Our Media and Climate Change Observatory (MeCCO) work is therefore effectively a first take on a first rough-draft of history as we monitor and examine media coverage of climate change over this past calendar year. In the pages that follow in this retrospective, our MeCCO team helps to explain the stories – on a month-to-month basis – that shaped a year 2024 of coverage. In the whipping winds and surging storms of breaking news, this retrospective can help us recall, reflect on and learn from what has emerged in news coverage of climate change over the past year as we look ahead to 2025.

MeCCO was established at University of Oxford in 2007. Since 2009, MeCCO has been based at the University of Colorado Boulder in the Cooperative Institute for Research in

Headline findings on media attention to climate change or global warming:

- **At the global level, coverage in 2024 dropped 16% from 2023**
- **2024 levels ranked seventh in the 21 years of print media monitoring at the global level**
- **In the United States, 2024 levels in print coverage ranked sixth in the 25 years of monitoring**
- **2024 levels in US television coverage ranked 12th in the 25 years of monitoring**

Figure 1. Map of the media sources we monitor for coverage of climate change or global warming across seven different regions around the world.

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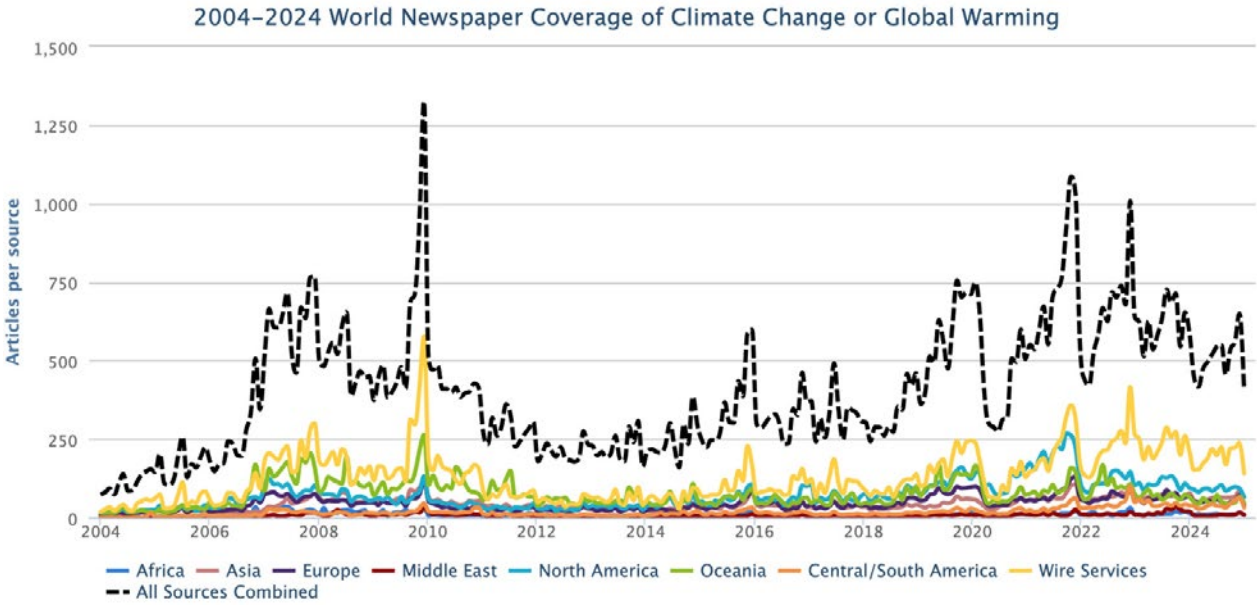

Figure 2. Media coverage of climate change or global warming in seven different regions around the world, from January 2020 through December 2024.

Environmental Sciences (CIRES). MeCCO is a multi-university collaboration involving 30 researchers across 15 institutions. In partnership with the University of Colorado Libraries, each month MeCCO provides 25 updated open-source downloadable datasets (as Excel files) that accompany our 50 monthly downloadable figures (as PNG, JPEG, PDF or SVG vector images) capturing coverage across these media and at different scales.

It is our ambition in MeCCO to provide a solid foundation for analysis of content and quality of coverage over time and place for a variety of users, from fellow researchers to practitioners, government decision-makers, businesses and NGOs as well as interested everyday citizens. Members of our team have published related research in many journals, books and other outlets based on these gathered data as well. Examples in 2024 include contributions to **this 2024 Report** of the Lancet Countdown on Health and Climate Change that appeared in ***The Lancet*** and contributions to this **open-access peer-reviewed journal article** entitled 'Vulnerable voices: using topic modeling to analyze newspaper coverage of climate change in 26 non-Annex I countries (2010–2020)' in ***Environmental Research Letters***.

We continue to pursue this work because **methodical tracking of patterns in media representations of climate change or global warming sheds light on what stories are told, what information proliferates, what links are made and – on the flipside – what issues, challenges, opportunities, events and developments remain untold and consequently less understood by those who rely on media to make sense of the world around us.** While independent and local/grassroots journalism continue to play important and vital roles, mainstream media outlets to help us understand multi-scale, multi-faceted and complex issues like climate change.

Climate change cuts to the heart of humans' relationship with the environment, and media provide powerful and important interpretations of climate science and policy, translating issues and information in the public sphere. Media workers and institutions continue to powerfully shape and negotiate meaning as they influence how we all – as citizens of planet Earth – value and make sense of the world in our backyard and around the globe.

The year 2024 featured many activities, events, challenges and issues that drew attention both to

as well as from climate change media attention. The movements in 2024 also sparked new phrases, words and terms to describe our distinct and shared realities. For example, *Cambridge Dictionary* selected 'manifest' as the rival *Oxford Dictionary* selected the phrase 'brain rot' while the *Macquarie* Dictionary from Australia selected the tasteful term 'enshittification'. So there were many moves from the more hopeful to the more pessimistic takes on prominent developments in this past calendar year.

There were many ups and downs as well as twists and turns in both the quantity and content of news coverage about global warming and climate change in 2024. The calendar year started with media reporting like ***this from The New York Times*** about a 2% dip in US emissions yet ended with news reports such as this from ***The Guardian*** on continued trending in the wrong direction with 2024 marked by the European Union Copernicus Climate Service and the US National Oceanic and Atmospheric Administration (NOAA) as the warmest on record. While media coverage in March like **this *Washington Post* story** noted technological improvements in monitoring global methane emissions through the launch of the new NASA/Carbon Mapper satellite, news stories such as **this from *The Associated Press*** in November remarked on the links between ongoing methane emissions, ocean warming and an active Atlantic hurricane season (punctuated by Beryl, Helen, Milton and Rafael). And as stories like **this one from the *BBC*** covered legal action that began in April a case against British Petroleum linking emissions with negative health effects in Iraq, the year came to a close with a Montana court ruling in favor of young people fighting for rights to a clean environment, with stories making links to global warming like **this one from US *National Public Radio***. Portrayals like **this one in *Le Monde*** about pilgrims dying in intense Saudi heat during the annual hajj, media accounts like **this one in *La Vanguardia*** linking climate change and flooding in Valencia, Spain and coverage like **this from *The Jerusalem Post*** noting how the Arctic has now moved from being a carbon sink (taking CO_2 from the atmosphere) to becoming a carbon source (now contributing to climate change) pierced the noise of the everyday of change.

In this past year, what has constituted 'news' about climate change or global warming was determined in the context of the warmest year (2024) and warmest decade (2015-2024) in nearly 175 years of temperature records history and the highest atmospheric carbon dioxide concentrations since 14 million years ago. Against this backdrop, **at the global level the quantity of media coverage of climate change in 2024 dropped 16% from 2023**, among the sources that we at the Media and Climate Change Observatory (MeCCO) have reliably monitored since we founded the observation network.

The downturn follows ongoing decreases in the past three years since 2021, which was the year to date with the highest amount of print media coverage globally. **2024 levels ranked seventh in the 21 years of print media monitoring at the global level** (see Table 1).

1. 2021	4. 2019	**7. 2024**	10. 2010	13. 2017	16. 2014	19. 2006
2. 2022	5. 2007	8. 2020	11. 2015	14. 2018	17. 2013	20. 2005
3. 2023	6. 2009	9. 2008	12. 2016	15. 2011	18. 2012	21. 2004

Table 1. Global-level print media coverage of climate change or global warming, ranked by year (1 = highest amount of coverage).

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We continue to monitor coverage across 59 countries in 14 languages and seven different regions (Africa, Asia, Europe, Latin America, Middle East, North America, and Oceania) around the world.

We at MeCCO currently carry out monitoring work across **59 countries** in **14 languages** and **seven different regions** (Africa, Asia, Europe, Latin America, Middle East, North America and Oceania) around the world.

ARABIC
'تغير المناخ' or 'الاحتباس الحراري'

DANISH
'klimaforandringer' or 'global opvarmning'

ENGLISH
'climate change' or 'global warming'

FINNISH
'ilmastonmuutos' or 'ilmaston lämpeneminen'

FRENCH
'changement climatique' or 'réchauffement climatique'

GERMAN
'klimawandel' or 'globale erwärmung'

ITALIAN
'cambiamenti climatici' or 'riscaldamento globale'

JAPANESE
'温暖化' or '気候変動'

KOREAN
'기후변화' or '온난화'

NORWEGIAN
'global oppvarming' or 'klimaendring'

PORTUGUESE
'mudanças climáticas' or 'aquecimento global'

RUSSIAN
'изменение климата' or 'глобальное потепление'

SPANISH
'cambio climático' or 'calentamiento global'

SWEDISH
'global uppvärmning' or 'klimatförändring'

In United States (US) English-language print newspaper coverage since 2000 has seen many increases and decreases (see Figure 3).

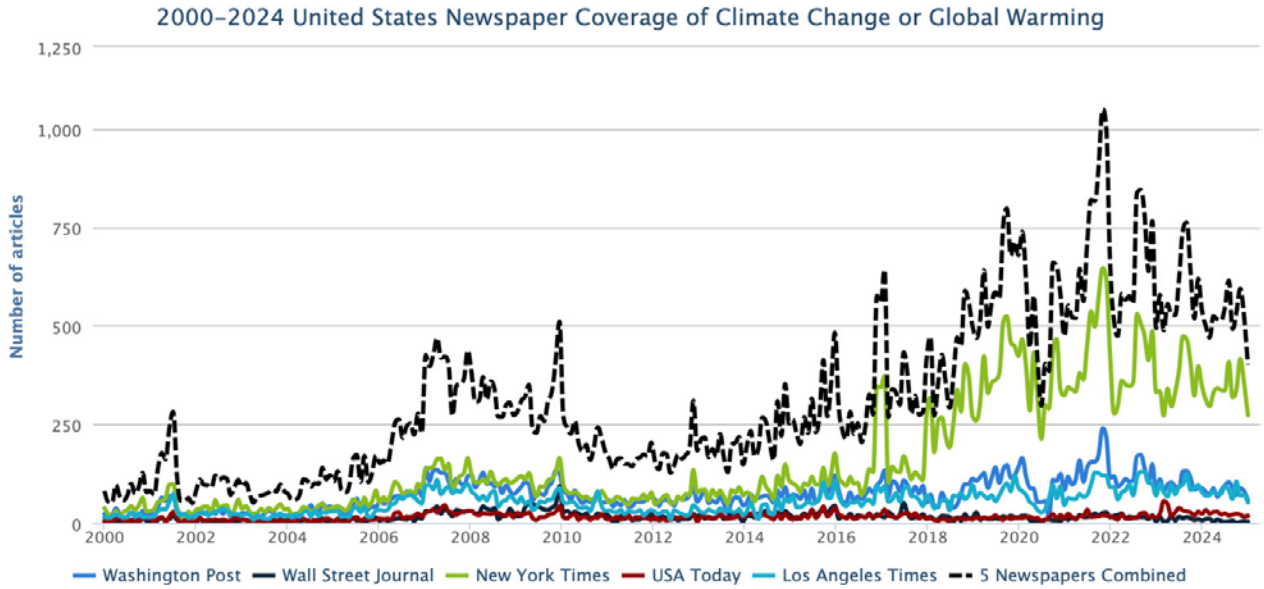

Figure 3. Coverage of climate change or global warming in the US – *Los Angeles Times*, *New York Times*, *USA Today*, *Wall Street Journal*, and *Washington Post* – from January 2000 through December 2024.

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At the US national level, **2024 levels in print coverage ranked sixth** (see Table 2) while **2024 levels in television coverage ranked 12th in the 25 years of monitoring** (see Table 3).

1. 2021	**6. 2024**	11. 2008	16. 2010	21. 2001
2. 2022	7. 2018	12. 2016	17. 2013	22. 2002
3. 2019	8. 2007	13. 2015	18. 2012	23. 2004
4. 2023	9. 2017	14. 2014	19. 2011	24. 2000
5. 2020	10. 2009	15. 2006	20. 2005	25. 2003

Table 2. US-level print media coverage of climate change or global warming, ranked by year (1 = highest amount of coverage).

1. 2021	6. 2009	11. 2016	16. 2013	21. 2005
2. 2022	7. 2008	**12. 2024**	17. 2006	22. 2000
3. 2019	8. 2015	13. 2018	18. 2011	23. 2004
4. 2007	9. 2017	14. 2014	19. 2001	24. 2002
5. 2023	10. 2020	15. 2010	20. 2012	25. 2003

Table 3. US-level television media coverage of climate change or global warming, ranked by year (1 = highest amount of coverage).

When averaging the 2024 coverage, it can be seen that **Latin America is the region that has had the highest coverage in 2024** compared to previous years, while **Oceania has been the region with the lowest** (see Table 4).

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVG
World	7	9	9	7	7	7	5	6	7	6	7	12	**7.4**
Africa	5	4	6	2	2	3	4	4	7	8	5	9	**4.9**
Asia	7	5	4	4	3	4	4	3	6	4	4	6	**4.5**
Europe	9	5	9	6	8	6	8	7	8	10	5	12	**7.8**
Latin America	3	3	3	1	1	3	3	4	3	3	2	4	**2.8**
Middle East	7	9	7	11	6	8	4	3	5	6	4	8	**6.5**
North America	6	6	7	7	6	7	4	5	6	6	9	12	**6.8**
Oceania	13	18	7	14	17	11	16	15	18	17	16	17	**14.9**

Table 4. Relative rankings of the volume of media coverage of climate change or global warming in seven different regions around the world, from January 2024 through December 2024 compared to previous 21 years.

In this look back at 2024, we invite you to page through each month of explainers that follow as you reflect on how the past year of media coverage of climate change may shape 2025 and beyond.

Report citation: Boykoff, M., Fernández-Reyes, Nacu-Schmidt, A., Osborne-Gowey, J. and Pearman, O. (2025). *A Review of Media Coverage of Climate Change and Global Warming in 2024*, Media and Climate Change Observatory, Cooperative Institute for Research in Environmental Sciences, University of Colorado, http://sciencepolicy.colorado.edu/icecaps/research/media_coverage/summaries/special_issue_2024.html.

Thank you for your ongoing interest in the work we do through MeCCO. We remain committed to our work monitoring media coverage of these intersecting dimensions and themes associated with climate change.

Our ongoing work is dependent on financial support so please consider contributing:

givecampus.com/campaigns/50245/donations

please enter in Media and Climate Change Observatory (MECCO) Fund as the gift designation

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JANUARY "Nearing a tipping point"

World's largest iceberg drifting away from Antarctica **captured by drone vision in this video**. Photo: *The Guardian*.

Media coverage of climate change or global warming in newspapers around the globe **plummeted 23%** from December 2023. Coverage in January 2024 **dipped 20%** from January 2023 levels.

January media coverage of climate change or global warming in newspapers around the globe plummeted 23% from December 2023. Also, coverage in January 2024 dipped 20% from January 2023 levels. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through January 2024.

At the regional level, January 2024 coverage decreased in North America (-6%), Latin America (-7%) [see Figure 2], Asia (-14%), the European Union (EU) (-21%), Oceania (-23%), Africa (-38%) and the Middle East (-64%) compared to the previous month of December.

Our team at the Media and Climate Change Observatory (MeCCO) continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for open-source datasets and downloadable visuals.

Scanning content in January 2024 coverage, many ***scientific*** themes continued to emerge in stories during the month. To illustrate, research findings focused on snow and climate change earned media attention early in the new calendar year. For example, ***Washington Post*** **journalist Maggie Penman reported**, "Snow is piling up across much of the United States this week, but new research shows this is the exception rather than the rule: Seasonal snow levels in the Northern Hemisphere have dwindled over the past 40 years due to climate change. Even so, snow responds to a warming planet in different ways. "A warmer atmosphere is also an atmosphere that can hold more water," said Alex Gottlieb, a graduate student at Dartmouth

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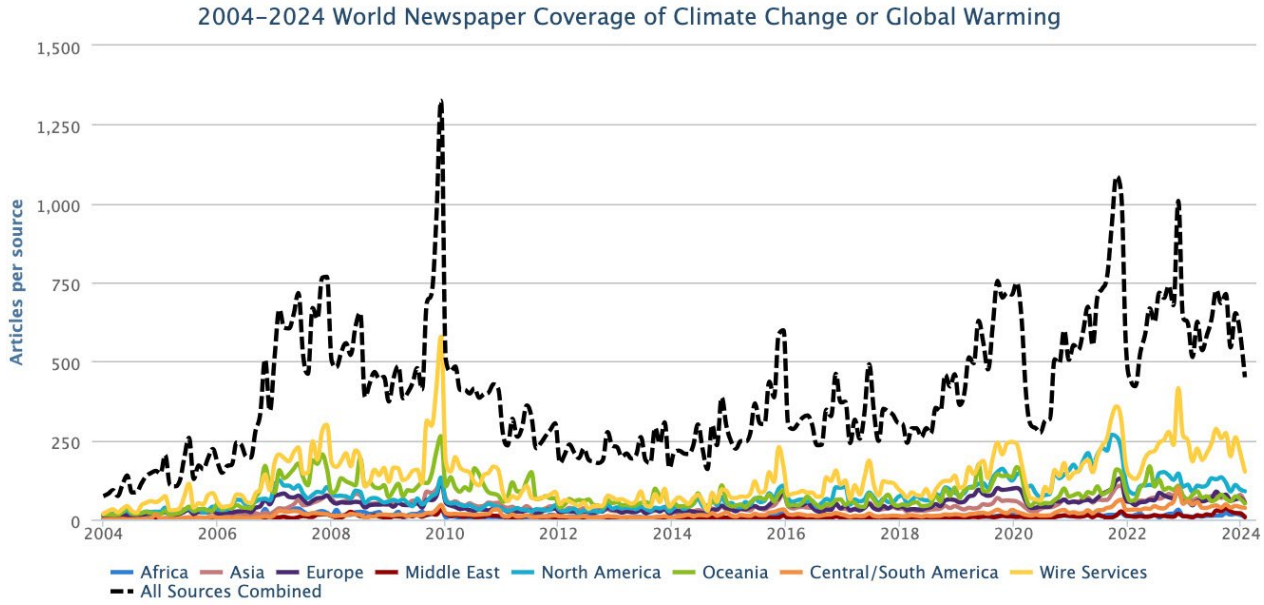

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through January 2024.

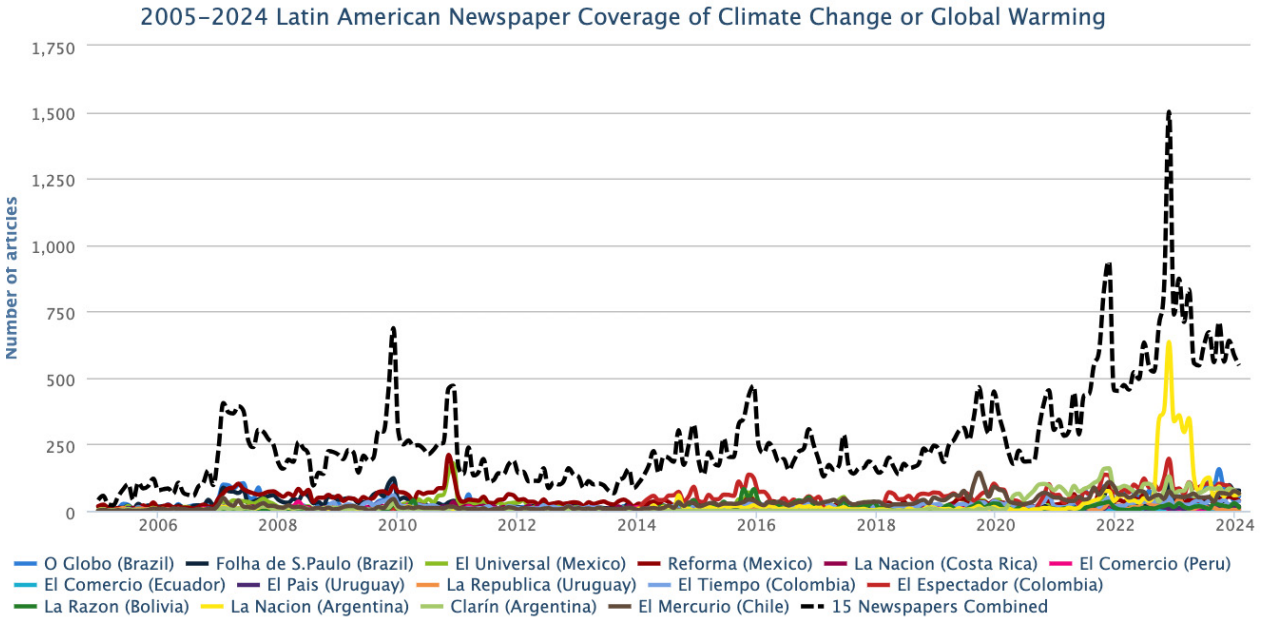

Figure 2. Newspaper coverage of climate change or global warming in Latin American newspapers from January 2004 through January 2024.

College and lead author on the new study in the journal Nature. That can increase precipitation, spurring snow, or even extreme storms and blizzards that offset the effect of snowmelt amid warmer temperatures. That has made it harder for scientists to calculate how snowpack has changed over time. But the new findings reveal that areas of the United States and Europe are nearing a tipping point where they could face a disastrous loss of snow for decades to come". Research examining continued ice loss in Greenland also generated media attention in January. For example, ***Guardian* environment editor Damian Carrington reported**, "The Greenland ice cap is losing an average of 30m tonnes of ice an hour due to the climate crisis, a study has revealed, which is 20% more than was previously thought. Some scientists are concerned that this additional source of freshwater pouring into the north Atlantic might mean a collapse of the ocean currents called the Atlantic meridional overturning

circulation (Amoc) is closer to being triggered, with severe consequences for humanity. Major ice loss from Greenland as a result of global heating has been recorded for decades. The techniques employed to date, such as measuring the height of the ice sheet or its weight via gravity data, are good at determining the losses that end up in the ocean and drive up sea level. However, they cannot account for the retreat of glaciers that already lie mostly below sea level in the narrow fjords around the island. In the study, satellite photos were analysed by scientists to determine the end position of Greenland's many glaciers every month from 1985 to 2022. This showed large and widespread shortening and in total amounted to a trillion tonnes of lost ice". Meanwhile, ***Washington Post* journalists Kasha Patel and Chris Mooney wrote**, "The Greenland ice sheet has lost 20 percent more ice than scientists previously thought, posing potential problems for ocean circulation patterns and sea level rise, according to a new study. Researchers had previously estimated that the Greenland ice sheet lost about 5,000 gigatons of ice in recent decades, enough to cover Texas in a sheet 26 feet high. The new estimate adds 1,000 gigatons to that period, the equivalent of piling about five more feet of ice on top of that fictitious Texas-sized sheet. The additional loss comes from an area previously unaccounted for in estimates: ice lost at a glacier's edges, where it meets the water. Before this study, estimates primarily considered mass changes in the interior of the ice sheet, which are driven by melting on the surface and glaciers thinning from their base on the ice sheet. The study, released Wednesday in Nature, provides improved measurements of ice loss and meltwater discharge in the ocean, which can advance sea level and ocean models. Loss from the edges of glaciers won't directly affect sea level rise because they usually sit within deep fjords below sea level, but the freshwater melt could affect ocean circulation patterns in the Atlantic Ocean…The researchers tracked changes in 207 glaciers in Greenland (constituting 90 percent of the ice sheet's mass) each month from 1985 to 2022. Analyzing more than 236,000 satellite images, they manually marked differences along the edges of glaciers and eventually trained algorithms to do the same. From the area measurements, the team could calculate the volume and mass of the changes in ice. Glaciers can lose ice in many ways. One change can happen when large ice chunks break off at the edge, known as calving.

> "The Greenland ice sheet has lost 20 percent more ice than scientists previously thought, posing potential problems for ocean circulation patterns and sea level rise... Scientists found that a total of 1,034 gigatons of ice was lost across all glaciers. The loss accelerated since January 2000, with the glaciers losing a total of 42 gigatons each year with **no signs of slowing down**. Most striking, nearly every glacier was shrinking — and in every corner of the ice sheet."

Icebergs that broke off from a glacier in Greenland. Photo: Bonnie Jo Mount/*The Washington Post*.

They can also lose ice when it melts faster than it can form, causing the end of a glacier to retreat and move to higher elevations. Scientists found that a total of 1,034 gigatons of ice was lost across all glaciers because of this retreat and calving on their peripheries. The loss accelerated since January 2000, with the glaciers losing a total of 42 gigatons each year. It has shown no signs of slowing down. Most striking, nearly every glacier was shrinking – and in every corner of the ice sheet".

In January, there were also many ***political*** and ***economic***-themed media stories about climate change or global warming that dominated overall coverage this month. For example, ***Associated Press*** **correspondent Matthew Daly reported**, "Climate-altering pollution from greenhouse gases declined by nearly 2% in the United States in 2023, even as the economy expanded at a faster clip, a new report finds. The decline, while "a step in the right direction,'' is far below the rate needed to meet President Joe Biden's pledge to cut U.S. emissions in half by 2030, compared to 2005 levels, said a report Wednesday from the Rhodium Group, an independent research firm. "Absent other changes," the U.S. is on track to cut greenhouse gas emissions by about 40% below 2005 levels by the end of the decade, said Ben King, associate director at Rhodium and lead author of the study. The report said U.S. carbon emissions declined by 1.9% last year. Emissions are down 17.2% from 2005. To reach Biden's goal, emissions would have to decline at a rate more than triple the 2023 figure and be sustained at that level every year until 2030, he said. Increased economic activity, including more energy production and greater use of cars, trucks and airplanes, can be associated with higher pollution, although there is not always a direct correlation. The U.S. economy grew by a projected 2.4% in 2023, according to the Conference Board, a business research group".

Also in January, media attention was drawn to renewable energy installation growth as examples of mode-switching sources to reduce emissions-related energy generation. For example, ***Guardian*** **journalist Jillian Ambrose**

"Global renewable energy capacity grew by the **fastest pace recorded in the last 20 years** in 2023, which could put the world within reach of meeting a key climate target by the end of the decade. The world's renewable energy grew by 50% last year to 510 gigawatts in 2023, the 22nd year in a row that renewable capacity additions set a new record."

A solar and windfarm in Tangshan City in north China's Hebei province. Photo: Xinhua/*Rex/Shutterstock*.

wrote, "Global renewable energy capacity grew by the fastest pace recorded in the last 20 years in 2023, which could put the world within reach of meeting a key climate target by the end of the decade, according to the International Energy Agency (IEA). The world's renewable energy grew by 50% last year to 510 gigawatts (GW) in 2023, the 22nd year in a row that renewable capacity additions set a new record, according to figures from the IEA. The "spectacular" growth offers a "real chance" of global governments meeting a pledge agreed at the Cop28 climate talks in November to triple renewable energy capacity by 2030 to significantly reduce consumption of fossil fuels, the IEA added. The IEA's latest report found that solar power accounted for three-quarters of the new renewable energy capacity installed worldwide last year. Most of the world's new solar power was built in China, which installed

more solar power last year than the entire world commissioned the year before, despite cutting subsidies in 2020 and 2021. Record rates of growth across Europe, the US and Brazil have put renewables on track to overtake coal as the largest source of global electricity generation by early 2025, the IEA said. By 2028, it forecasts renewable energy sources will account for more than 42% of global electricity generation. Tripling global renewable energy by the end of the decade to help cut carbon emissions is one of five main climate targets designed to prevent runaway global heating, alongside doubling energy efficiency, cutting methane emissions, transitioning away from fossil fuels, and scaling up financing for emerging and developing economies. Last year's relatively mild winter and continued declines in power generation from coal-fired plants drove down emissions in the U.S. power and buildings sectors, the report said".

"The cultural wisdom of our ancestors in Southeast Asia contains much knowledge that we urgently need to recollect, or re-learn, in the 21st century if we are to achieve the goal of limiting temperature increase to a rise of 1.5 degrees Celsius. Our ancestors in Southeast Asia knew how to live in harmony with nature, exploiting nature's bounty without destroying nature. Traditional ways of agriculture, community control of forests and watersheds, building design and construction practices, urban layout, and belief systems can be adapted to modern needs to make present-day living and working much more climate-friendly."

- Moe Moe Lwin, *The Bangkok Post*

Young activists participate in a Global Climate Strike near the Ministry of Natural Resources and Environment office in Bangkok, Thailand. Photo: Chanat Katanyu.

Several ***cultural***-themed stories relating to climate change or global warming also ran in January, many were reflections on the previous calendar year. Among them, writing in ***The Bangkok Post*****, Moe Moe Lwin wrote**, "the cultural wisdom of our ancestors in Southeast Asia contains much knowledge that we urgently need to recollect, or re-learn, in the 21st century if we are to achieve the goal of limiting temperature increase to a rise of 1.5 degrees Celsius. Our ancestors in Southeast Asia knew how to live in harmony with nature, exploiting nature's bounty without destroying nature. Traditional ways of agriculture, community control of forests and watersheds, building design and construction practices, urban layout, and belief systems can be adapted to modern needs to make present-day living and working much more climate-friendly". As a second example, ***New York Times*** **journalists David Gelles and Manuela Andreoni observed**, "2023 was a year when climate change felt inescapable. Whether it was the raging wildfires in Canada, the orange skies in New York, the flash floods in Libya or the searing heat in China, the effects of our overheating planet were too severe to ignore. Not coincidentally, it was also a year when climate change started to feel ubiquitous in popular culture. Glossy TV shows, best-selling books, art exhibits and even pop music tackled the subject, often with the kind

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Figure 3. Examples of newspaper front pages with climate change stories in January.

of nuance and creativity that can help us make sense of the world's thorniest issues".

Finally, January 2024 media stories featured several *ecological* and *meteorological* dimensions of climate change or global warming. For example, ***Wall Street Journal* reporter Eric Niiler noted**, "The record global temperatures that spawned heavy rainfall, disastrous floods and raging wildfires in 2023 will likely continue in 2024, according to the European Union's Copernicus Climate Change Service. The service is the first analysis to declare—after months of speculation—that 2023 was the hottest year since record-keeping began in the mid-1800s. 2023's global average temperature, the study found, was 14.98 degrees Celsius, or 58.96 degrees Fahrenheit. That average was 1.48 degrees C, or 2.66 degrees F, hotter than the preindustrial baseline, creeping ever closer to the 1.5 degrees C threshold the world's nations have agreed to keep warming below to avoid the worst effects of climate change". As a second example (among many), **journalist Jonathan Chadwick from *The Daily Mail* reported**, "Scientists have long suspected it but now it's official – 2023 was the hottest year on record. Last year's global average temperature was 58.96°F (14.98°C), around 0.3°F (0.17°C) higher than the result in 2016, the previous hottest year, experts from the EU's Copernicus climate change programme (CS3) reveal. The scientists have already revealed that last summer was the hottest season on record, while July was the hottest month on record. Experts warn that global temperatures are now close to the 2.7°F (1.5°C) limit – and they point to greenhouse gas emissions as the cause. 2023 has already been dubbed the year Earth suffered the costliest climate disasters like droughts, floods, wildfires and lethal heatwaves, largely due to these emissions".

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FEBRUARY "The devil is in the details"

A climate protest in Manhattan's financial district last year. Several major firms retreated from a global climate coalition in recent days. Photo: Spencer Platt/*Getty Images*.

Media coverage of climate change or global warming in newspapers around the globe **decreased 9%** from January 2024. Coverage in February **dropped 30%** from February 2023 levels. International wire services **dipped 29%** from the previous month.

February media coverage of climate change or global warming in newspapers around the globe decreased 9% from January 2024. Moreover, coverage in February dropped 30% from February 2023 levels. Of particular note, in February international wire services dipped 29% from the previous month. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through February 2024.

At the regional level, February 2024 coverage decreased in all regions, except in Africa where it increased 39%. It went down in North America (-6%) [see Figure 2], Latin America (-7%), the European Union (EU) (-21%), Oceania (-23%), Asia (-30%), and the Middle East (-64%) compared to the previous month of January.

The Media and Climate Change Observatory (MeCCO) team continues to provide international and regional assessments of trends in coverage, along with several country-level appraisals each month. We monitor media coverage of climate change or global warming in 14 languages. We use Factiva, Infomedia, ProQuest, Nifty, BigKind and NexisUni databases for our collective work that currently involved a team of 23 people across 15 institutions in seven countries. Visit our website for open-source datasets and downloadable visuals.

Moving to considerations of content, February 2024 media stories featured several ***ecological*** and ***meteorological*** dimensions of climate change or global warming. To begin, some exploratory links were made in early February between Chilean wildfires and climate change. For example, ***New York Times*** **correspondents**

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A Review of Media Coverage of Climate Change and Global Warming in 2024

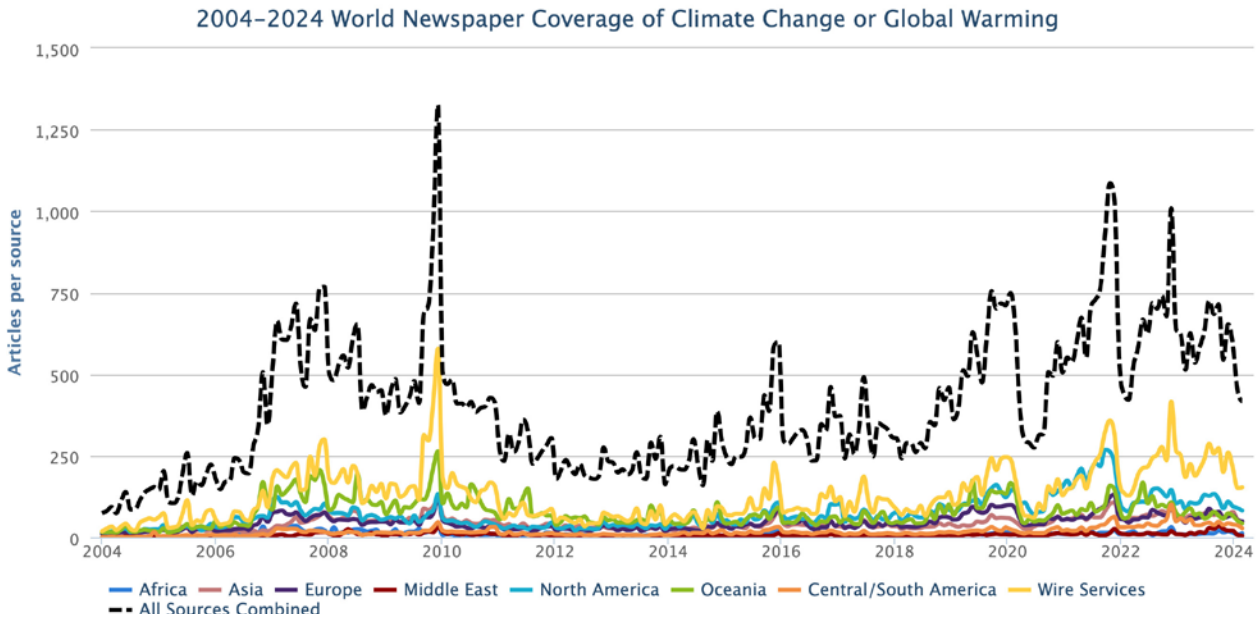

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through February 2024.

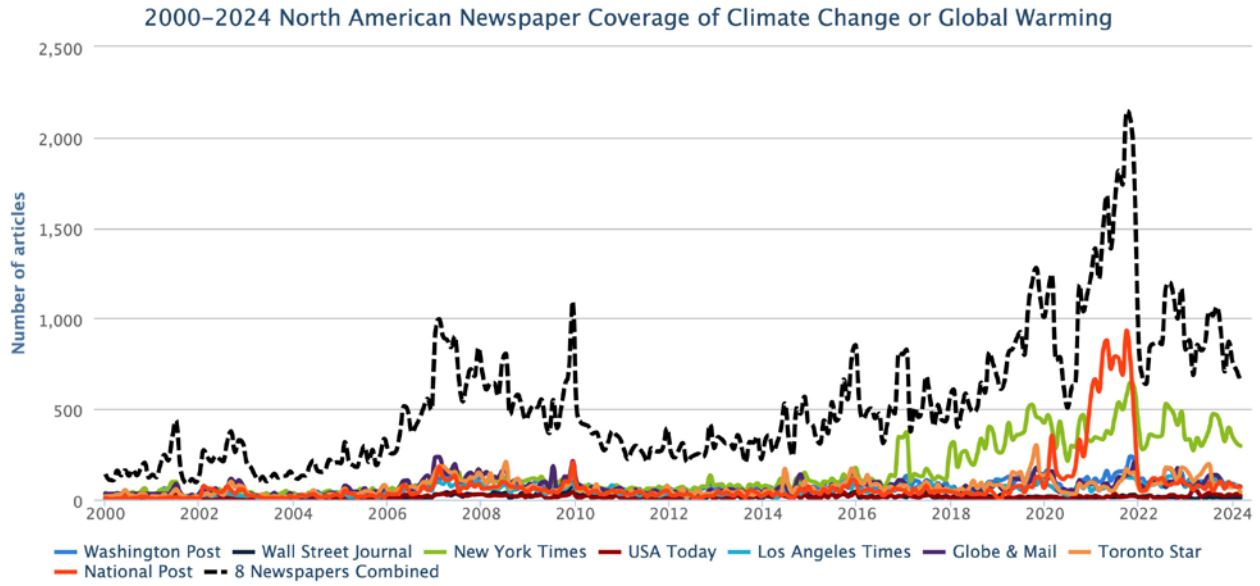

Figure 2. Newspaper coverage of climate change or global warming in North American newspapers from January 2004 through February 2024.

Annie Correal and John Bartlett noted, "Days after devastating wildfires ripped through Chile's Pacific Coast, ravaging entire neighborhoods and trapping people fleeing in cars, officials said on Sunday that at least 112 people had been killed and hundreds remained missing and warned that the number of dead could rise sharply…Several other countries in South America have also struggled to contain wildfires. Colombia has seen dozens of fires erupt in recent weeks, including around the capital of Bogotá, as the country has experienced a spell of dry weather. Firefighters have also been battling blazes in Ecuador, Venezuela and Argentina. The cyclical climate phenomenon known as El Niño has exacerbated droughts and high temperatures through parts of the continent, creating conditions that experts say are ripe for forest fires".

Also in February, changing monarch butterfly migrations earned media attention. For example, ***Guardian* correspondent Catrin Einhorn reported**, "The number of monarch

butterflies at their overwintering areas in Mexico dropped precipitously this year to the second-lowest level on record, according to an annual survey. The census, considered a benchmark of the species' health, found that the butterflies occupied only about 2.2 acres of forest in central Mexico, down 59 percent from the prior year. Only the winter of 2013-14 had fewer butterflies. Scientists said the decline appeared to be driven by hot, dry conditions in the United States and Canada that reduced the quality of available milkweed, the only plants monarch caterpillars can eat, as well as the availability of nectar from many kinds of flowers, which they feed on as butterflies". As a second example, ***Associated Press* correspondent Mark Stevenson noted**, "The number of monarch butterflies at their wintering areas in Mexico dropped by 59% this year to the second lowest level since record keeping began, experts said Wednesday, blaming heat, drought and loss of habitat. The butterflies' migration from Canada and the United States to Mexico and back again is considered a marvel of nature. No single butterfly lives to complete the entire journey. The annual butterfly count doesn't calculate the individual number of butterflies, but rather the number of acres they cover when they clump together on tree branches in the mountain pine and fir forests west of Mexico City. Monarchs from east of the Rocky Mountains in the United States and Canada overwinter there. Mexico's Commission for National Protected Areas said the butterflies covered an area equivalent to 2.2 acres (0.9 hectares), down from 5.4 acres (2.21 hectares) last year…Experts said heat and drought appeared to be the main culprits in this year's drought. "It has a lot to do with climate change," said Gloria Tavera, the commission's conservation director".

"The number of monarch butterflies at their wintering areas in Mexico **dropped by 59%** this year to the second lowest level since record keeping began, blaming heat, drought and loss of habitat. The butterflies' migration from Canada and the United States to Mexico and back again is considered a marvel of nature. No single butterfly lives to complete the entire journey."

Monarch butterflies land on branches at Monarch Grove Sanctuary in Pacific Grove, Calif., on Nov. 10, 2021. The number of western monarch butterflies overwintering in California dropped 30% from the previous year likely due to a wet winter. Photo: Nic Coury/*AP*.

February 2024 coverage also contained many ***scientific*** themes in stories during the month. Among them, considerations of hurricanes and climate change made news. For example, ***Associated Press* correspondent Seth Borenstein wrote**, "A handful of super powerful tropical storms in the last decade and the prospect of more to come has a couple of experts proposing a new category of whopper hurricanes: Category 6. Studies have shown that the strongest tropical storms are getting more intense because of climate change. So the traditional five-category Saffir-Simpson scale, developed more than 50 years ago, may not show the true power of the most muscular storms, two climate scientists suggest in a Monday study in the Proceedings of the National Academy of Sciences. They propose a sixth category for storms with winds that exceed 192 miles per hour (309 kilometers per hour).

Currently, storms with winds of 157 mph (252 kilometers per hour) or higher are Category 5. The study's authors said that open-ended grouping doesn't warn people enough about the higher dangers from monstrous storms that flirt with 200 mph (322 kph) or higher. Several experts told The Associated Press they don't think another category is necessary. They said it could even give the wrong signal to the public because it's based on wind speed, while water is by far the deadliest killer in hurricanes".

February coverage continued to also track record-breaking warmth on the planet. For example, ***ABC News* reporters Julia Jacobo, Daniel Peck and Ginger Zee noted**, "Last month's global temperatures led to the warmest January on record, continuing a pattern of eight consecutive hottest months on record, according to scientists. The average surface air temperature on Earth in January was 13.14 degrees Celsius, or 55.65 degrees Fahrenheit -- about 1.26 degrees Fahrenheit above the 1991 to 2020 average for January and 0.22 degrees Fahrenheit above the previous record, set in January 2020, according to the monthly report released Wednesday by Copernicus, the European Union's climate change service. The month as a whole was 1.66 degrees Celsius (or 2.99 degrees Fahrenheit) warmer than an estimate of the January average for 1850 to 1900, the designated pre-industrial reference period, the report, which highlights changes observed in global surface air temperature, sea ice cover and hydrological variables, found. February 2023 through January 2024 was the warmest 12-month stretch on record with the global mean temperature measuring at 1.52 degrees Celsius -- or 2.74 degrees Fahrenheit -- above the 1850 to 1900 pre-industrial average, according to the researchers. The Paris Agreement, a collective climate change agreement among the majority of the world's countries, aims to keep global temperatures below 1.5 degrees Celsius of warming since the Industrial Revolution".

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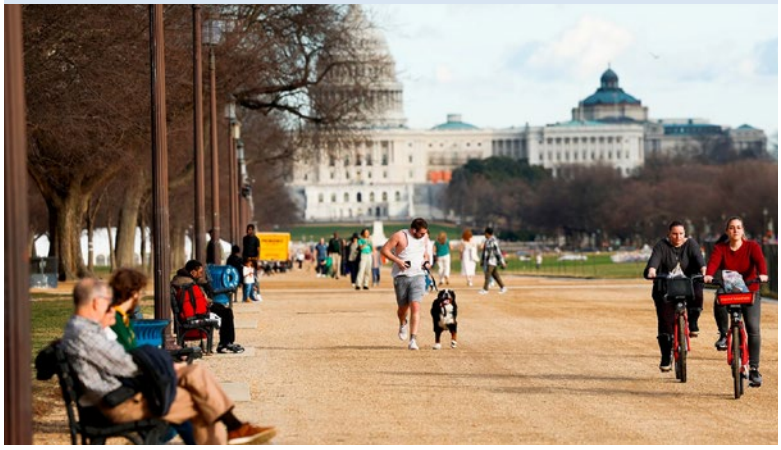

People run on the National Mall, Jan. 26, 2024, in Washington, D.C. Photo: Anna Moneymaker/*Getty Images*.

Further into the month, ecological stories relating to climate change and conservation circulated. For example, ***CNN* journalists Angela Dewan and Rachel Ramirez reported**, "Female leatherback turtles are among the world's most intrepid creatures, making journeys as far as 10,000 miles after nesting to find food in far-away seas. They've been known to set off from tropical Southeast Asia up to the cold waters of Alaska, where jellyfish are abundant. But travelling such a long way means encountering threats that can be fatal: fishing nets intended for other species, poachers, pollution and waters warmed by the climate crisis, which force the turtles to travel even further to find their prey. These turtles are just one of hundreds of

migratory species – those that make remarkable journeys each year across land, rivers and oceans – that are facing extinction because of human interference, according to a landmark UN agency report published Monday. Of the 1,189 creatures listed by the Convention on the Conservation of Migratory Species of Wild Animals, or CMS, more than one in five are threatened. They include species from all sorts of animal groups – whales, sharks, elephants, wild cats, raptors, birds and insects, among others. Some 44% of those species listed are undergoing population declines, the report said. Most alarming is the state of the world's migratory fish: Nearly all, 97%, of those listed are threatened with extinction".

"Female leatherback turtles are among the world's most intrepid creatures, making journeys as far as 10,000 miles after nesting to find food in far-away seas. Traveling such a long way means encountering threats that can be fatal: fishing nets intended for other species, poachers, pollution and waters warmed by the climate crisis, which force the turtles to travel even further to find their prey. These turtles are just one of hundreds of migratory species — those that make remarkable journeys each year across land, rivers and oceans — that are facing extinction because of human interference."

Leatherback turtles encounter many threats during their long migration journeys, and now face extinction due to human activity, a UN report shows. Photo: Samuel J. Coe/*Getty Images*.

February featured ongoing ***cultural***-themed stories relating to climate change or global warming as well. To illustrate, a decade-long legal case about defamation of a climate scientist came to a close and it generated several media accounts. For example, ***Washington Post* journalist Dino Grandoni reported**, "Michael Mann, a prominent climate scientist, won his long-standing legal battle against two right-wing bloggers who claimed that he manipulated data in his research and compared him to convicted child molester Jerry Sandusky, a major victory for the outspoken researcher. A jury in a civil trial in Washington on Thursday found that the two writers, Rand Simberg and Mark Steyn, defamed and injured the researcher in a pair of blog posts published in 2012, and awarded him more than $1 million. "I hope this verdict sends a message that falsely attacking climate scientists is not protected speech," Mann said in a statement Mann's victory comes amid heightened attacks on scientists working not just on climate change but also on vaccines and other issues. But the case was one that some critics worried could have a stifling effect on free speech and open debate in science".

Last, many ***political*** and ***economic***-themed media stories about climate change or global warming were evident in coverage this month. For instance, business commitments to climate action – and backtracking therein – earned media attention in February. For example, ***New York Times* journalist David Gelles noted**,

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"Many of the world's biggest financial firms spent the past several years burnishing their environmental images by pledging to use their financial muscle to fight climate change. Now, Wall Street has flip-flopped. In recent days, giants of the financial world including JPMorgan, State Street and Pimco all pulled out of a group called Climate Action 100+, an international coalition of money managers that was pushing big companies to address climate issues. Wall Street's retreat from earlier environmental pledges has been on a slow, steady glide path for months, particularly as Republicans began withering political attacks, saying the investment firms were engaging in "woke capitalism." But in the past few weeks, things accelerated significantly. BlackRock, the world's largest asset manager, scaled back its involvement in the group. Bank of America reneged on a commitment to stop financing new coal mines, coal-burning power plants and Arctic drilling projects. And Republican politicians, sensing momentum, called on other firms to follow suit. The reasons behind the burst of activity reveal how difficult it is proving to be for the business world to make good on its promises to become more environmentally responsible. While many companies say they are committed to combating climate change, the devil is in the details".

Also in February, protests by European farmers about agricultural policies intersected with climate change in several media portrayals. For example, ***Expansión* journalist J. Díaz wrote,** "One of the great triggers of the protests are the growing regulatory and administrative demands derived from the Common Agricultural Policy and the European Green Deal, such as the obligation to allocate 4% of arable land to fallow; that the use of fertilizers be reduced by 20% between now and 2030 or the use of pesticides by 50%". As a second example, ***El País* María R. Sahuquillo noted**, "The farmers' protests in several European countries and, above all, everything, the fear of populism that feeds on the mobilization and cries out against EU regulations, as well as pressure from conservatives, who fear losing ground to the extreme right, push the European Union to reduce its ambition in the green transition. The president of the European Commission, Ursula von der Leyen, announced that she is putting aside the pesticide reduction regulations, one of the star formulas within the green pact".

"One of the great triggers of the protests are the growing regulatory and administrative demands derived from the Common Agricultural Policy and the European Green Deal, such as the obligation to allocate 4% of arable land to fallow; that the use of fertilizers be reduced by 20% between now and 2030 or the use of pesticides by 50%."

Farmers protest in Girona, Spain in February 2024. Photo: Albert Gea/*Reuters*.

Last, the United Nations environment assembly in Nairobi, Kenya in late February also generated climate-related news. For example, ***Associated Press* correspondent Carlos Mureithi noted**, "The world's top decision-making body on the environment is meeting in Kenya's capital this week to discuss how countries can work together to tackle environmental crises like climate change, pollution and loss of biodiversity. The meeting in Nairobi is the sixth session of the United Nations Environment Assembly, and governments, civil society groups, scientists and the private sector are attending. At the opening

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Figure 3. Examples of newspaper front pages with climate change stories in February 2024.

plenary at the U.N. Environment Programme headquarters in Nairobi on Monday, Leila Benali, the president of this year's assembly, urged members to work toward making "a tangible difference to people's lives." "It is up to us to deliver a clean greener and safer future for all people," she said. Kenya's environment minister, Soipan Tuya, described this year's assembly as "an opportunity to inject optimism and restore faith" in the global environmental governance system. At the gathering, member states discuss a raft of draft resolutions on a range of issues that the assembly adopts upon consensus. If a proposal is adopted, it sets the stage for countries to implement what's been agreed on". As a second example, ***Guardian* journalist Caroline Kimeu reported**, "In an attempt to avoid the "injustices and extractivism" of fossil fuel operations, African leaders are calling for better controls on the dash for the minerals and metals needed for a clean energy transition. A resolution for structural change that will promote equitable benefit-sharing from extraction, supported by a group of mainly African countries including Senegal, Burkina Faso, Cameroon and Chad, was presented at the UN environmental assembly in Nairobi on Wednesday and called for the sustainable use of transitional minerals. "This resolution is crucial for African countries, the environment and the future of our population," said Jean Marie Bope, a delegate from the Democratic Republic of the Congo, which supported the resolution. Demand for transitional minerals and metals, which are used to build renewable energy technologies such as solar plants, windfarms and electric vehicles, has surged over the past decade as the world transitions from fossil fuels. Billions of tonnes of transitional minerals will be needed in the next three decades if the world is to meet its climate goals, according to the United Nations Environment Programme".

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MARCH "Sounding the red alert to the world"

Floods in Rochester, Australia, in January. Photo. Diego Fedele/*Getty Images*.

Media attention around the globe went **up 10%** from February 2024. Coverage in March was still **down 23%** from March 2023 levels. International wire services **increased 13%** from the previous month, while radio coverage **dropped 3%** from the previous month.

March media coverage of climate change or global warming in newspapers around the globe went up 10% from February 2024. However, coverage in March was still down 23% from March 2023 levels. Of particular note, in March international wire services increased 13% from the previous month, while radio coverage dropped 3% from the previous month. Our Media and Climate Change Observatory (MeCCO) team has detected that the first three months of global print coverage has seen a drop 20% compared to the first three months of 2023. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through March 2024.

At the regional level, March 2024 coverage increased in all regions from the previous month (except in Africa, which dropped 22%): the European Union (EU) rose 2%, Latin America shot up 9%, North America climbed 12%, Asia coverage increased 13% [see Figure 2], and Middle East and Oceania climate change news each surged 50%.

Moving to considerations of content, March 2024 media stories featured several ***scientific*** themes in stories during the month. To begin, the launch of a satellite to track methane pollution and leaks from oil and gas industry activities – called MethaneSAT – earned considerable media attention. For example, ***Washington Post* correspondent Nicolás Rivero reported**, "The global crackdown on methane emissions will get a boost from a watchdog satellite built to track and publicly reveal the biggest methane polluters in the oil and gas industry. The satellite launched March 4 on a SpaceX rocket and will begin transmitting data later this year. The satellite, designed by scientists from the

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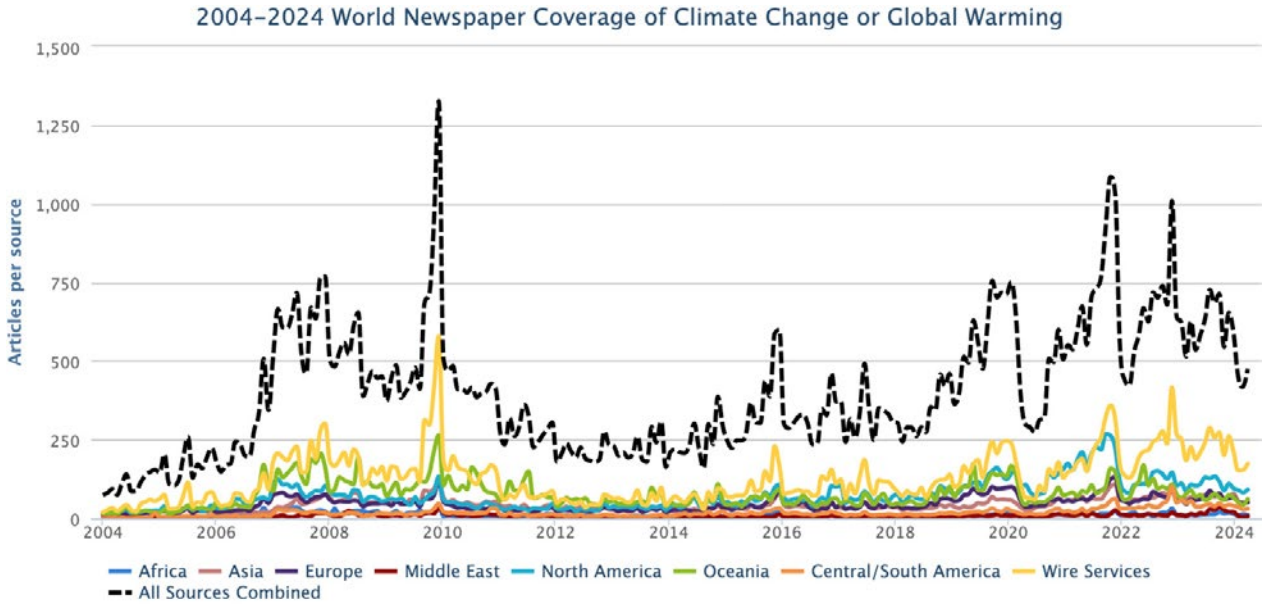

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through March 2024.

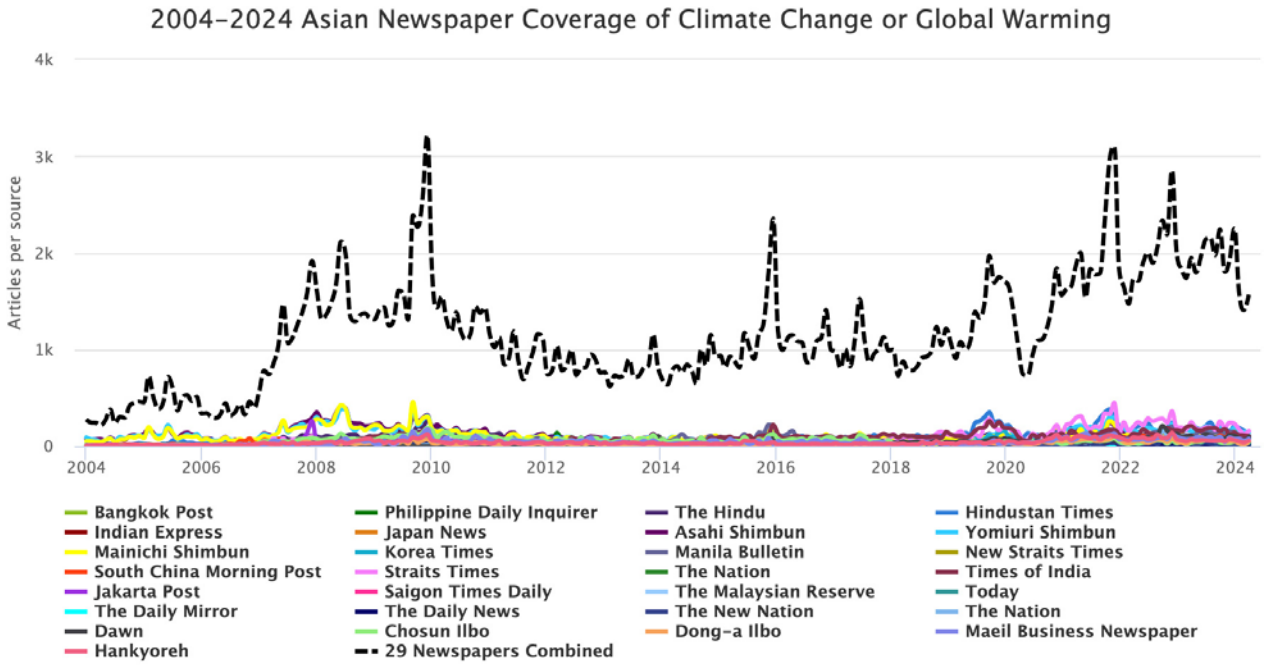

Figure 2. Newspaper coverage of climate change or global warming in Asian newspapers from January 2004 through March 2024.

nonprofit Environmental Defense Fund (EDF) and Harvard University, will monitor areas that supply 80 percent of the world's natural gas. Unlike other methane tracking satellites, it will cover a vast territory while also gathering data detailed enough to spot the sources of emissions. "Soon, there will be no place to hide," said Ben Cahill, a climate expert at the Center for Strategic and International Studies, a national security think tank. "There's going to be a lot of public data on methane emissions, so companies will have very strong incentives to figure out the problem and fix it." Methane, a potent greenhouse gas released from farms, landfills and leaky fossil fuel equipment, accounts for nearly a third of global warming. Cutting methane emissions is one of the fastest ways to slow climate change, according to climate scientists, because even though it traps 80 times as much heat in the atmosphere as carbon dioxide, it dissipates

after about 12 years. Most of the world's oil and gas companies agreed to slash their methane emissions by more than 80 percent by 2030 at last year's COP28 climate conference, and policymakers are working to hold them to that promise. U.S. regulators proposed steep fines on methane emissions in January and struck a deal with regulators in Europe, Japan, South Korea and Australia last year to monitor fossil fuel companies' methane emissions. But so far, it's been hard to track companies' progress. There are thousands of oil and gas facilities around the world with countless pieces of equipment that can leak or malfunction and release methane, which is odorless and invisible to the naked eye. Companies and regulators can measure some emissions by installing methane detectors or using planes or drones to fly sensors over a facility, but the data is incomplete and hard to compare between companies. Now, a new generation of satellites, led by MethaneSAT, promises to give a more complete picture of the oil and gas industry's global methane emissions".

As March unfolded, a report released from the World Meteorological Organization – called 'State of the Global Climate Report' – outlined impacts of a changing climate, and earned widespread media coverage. For example, ***Guardian*** **correspondent Ajit Naranjan reported**, "The world has never been closer to breaching the 1.5C (2.7F) global heating limit, even if only temporarily, the United Nations' weather agency has warned. The World Meteorological Organization (WMO) confirmed on Tuesday that 2023 was the hottest year on record by a clear margin. In a report on the climate, it found that records were "once again broken, and in some cases smashed" for key indicators such as greenhouse gas pollution, surface temperatures, ocean heat and acidification, sea level rise, Antarctic sea ice cover and glacier retreat. Andrea Celeste Saulo, secretary general of the WMO, said the organisation was now "sounding the red alert to the world". The report found temperatures near the surface of the earth were 1.45C higher last year than they were in the late 1800s, when people began to destroy nature at an industrial scale and burn large amounts of coal, oil and gas. The error margin of 0.12C in the temperature estimate is large enough that the earth may have already heated 1.5C. But this would not mean world leaders have broken the promise they made in Paris in 2015 to halt global heating to that level by the end of the century, scientists warn, because they measure global heating using a 30-year average rather than counting a spike in a single year. The report documented violent weather extremes – particularly heat – on every inhabited continent. Some of the weather events were made stronger or more likely by climate change, rapid attribution studies have shown".

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Aftermath of a wildfire caused by a deadly heatwave near the city of Santa Juana, Chile, in February 2023. Photo: Pablo Hidalgo/*EPA*.

Also in March 2024, there were several ongoing media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. At the beginning of the month, the European Union Copernicus Climate Change Service shared news that

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February 2024 was the hottest February in recorded history. This sparked news reporting. For example, ***CNN* journalist Laura Paddison reported**, "Last month was the planet's hottest February on record, marking the ninth month in a row that global records tumbled, according to new data from Copernicus, the European Union's climate monitoring service. February was 1.77 degrees Celsius warmer than the average February in pre-industrial times, Copernicus found, and it capped off the hottest 12-month period in recorded history, at 1.56 degrees above pre-industrial levels. It's yet another grim climate change milestone, as the long-term impacts of human-caused global warming are given a boost by El Niño, a natural climate fluctuation".

> "The drought in Zimbabwe, neighboring Zambia and Malawi has reached crisis levels. A year ago, much of this region was drenched by deadly tropical storms and floods. It is in the midst of a vicious weather cycle: too much rain, then not enough. It's a story of the climate extremes that scientists say are becoming more frequent and more damaging, especially for the world's most vulnerable people."

James Tshuma, a farmer in Mangwe district in southwestern Zimbabwe, stands in the middle of his dried up crop field amid a drought, in Zimbabwe, March, 22, 2024. Photo: Tsvangirayi Mukwazhi/*AP*.

Regionally, ecological and meteorological stories linking to climate change earned attention in March as well. For example, the heat that affected Rio de Janeiro and São Paulo was driven by climate change. ***Folha de Sao Paulo* published a story that noted**, "A scientific study carried out by ClimaMeter, a platform of the Paris-Saclay University, evaluated the heat wave that hit part of Brazil from December 15 to 18. March and led to temperatures and thermal sensations reaching new records in cities such as São Paulo and Rio de Janeiro. The study concluded that heat waves similar to the one that occurred in March are 1°C warmer than those previously observed in the country, occurring even at the end of summer. In the assessment of researcher Tommaso Albert, one of the authors of the study, the recent heat wave highlights the profound impact of climate change in Brazil, with increased health risks and important economic implications. In the city of São Paulo, on Saturday, March 16, a temperature of 34.7°C was recorded, the highest recorded in the month in at least 81 years, since the Inmet (National Institute of Meteorology) began compiling the statistics, in 1943. This was the hottest day of 2024 in the capital of São Paulo. In Rio, the next day (March 17), the thermal sensation was record, with 62.3°C recorded at the Guaratiba meteorological station".

Meanwhile, on the African continent, climate-related extremes garnered media attention. For example, ***Associated Press* correspondents Faray Mutsaka and Gerald Imray reported**, "The drought in Zimbabwe, neighboring Zambia and Malawi has reached crisis levels. Zambia and Malawi have declared national disasters. Zimbabwe could be on the brink of doing the same. The drought has reached Botswana and Angola to the west, and Mozambique and

Madagascar to the east. A year ago, much of this region was drenched by deadly tropical storms and floods. It is in the midst of a vicious weather cycle: too much rain, then not enough. It's a story of the climate extremes that scientists say are becoming more frequent and more damaging, especially for the world's most vulnerable people".

In Europe, episodes of severe droughts impacted the region, and earned media attention. For example, according to an **editorial in *La Vanguardia***, "in Catalonia, the drought is wreaking havoc in the Penedès. There is a danger that a third of the 32,000 hectares of vineyards in the Alt and Baix Penedès will not sprout this year, or that, if they do it, they do not produce production. Last year some winegrowers already lost a large part of their production and now it will be much worse. It was feared that climate change could be a threat to the vineyards of these regions. But everything has been brought forward with a lack of water and unprecedented high temperatures. The recent rains have been clearly insufficient."

Media coverage in March 2024 also featured related and ongoing ***cultural***-themed stories relating to climate change or global warming as well. To illustrate, there was reporting on how heat waves across several regions of the planet impacted everyday lives and livelihoods. For example, ***Associated Press* correspondent Deng Machol reported from Sudan**, noting, "South Sudan is closing all schools starting Monday in preparation for an extreme heat wave expected to last two weeks. The health and education ministries advised parents to keep all children indoors as temperatures are expected to soar to 45 degrees Celsius (113 Fahrenheit). They warned that any school found open during the warning period would have its registration withdrawn, but the statement issued late Saturday didn't specify how long schools would remain shuttered. The ministries said they "will continue to monitor the situation and inform the public accordingly." Resident Peter Garang, who lives in the capital, Juba, welcomed the decision. He said "schools should be connected to the electricity grid" to

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People stand by their houses in Juba, South Sudan. Photo: Gregorio Borgia/*AP*.

enable the installation of air conditioners. South Sudan, one of the world's youngest nations, is particularly vulnerable to climate change with heat waves common but rarely exceeding 40 C (104 F). Civil conflict has plagued the east African country which also suffered from drought and flooding, making living conditions difficult for residents. The World Food Program in its latest country brief said South Sudan "continues to face a dire humanitarian crisis" due to violence, economic instability, climate change and an influx of people fleeing the conflict in neighboring Sudan. It also stated that 818,000 vulnerable people were given food and cash-based transfers in January".

Meanwhile, ***Associated Press* journalist Sibi Arasu reported from India**, "Bhavani Mani Muthuvel and her family of nine have around five 20-liter (5-gallon) buckets worth of water for the week for cooking, cleaning and household chores. "From taking showers to using toilets

and washing clothes, we are taking turns to do everything," she said. It's the only water they can afford. A resident of Ambedkar Nagar, a low-income settlement in the shadows of the lavish headquarters of multiple global software companies in Bengaluru's Whitefield neighborhood, Muthuvel is normally reliant on piped water, sourced from groundwater. But it's drying up. She said it's the worst water crisis she has experienced in her 40 years in the neighborhood. Bengaluru in southern India is witnessing an unusually hot February and March, and in the last few years, it has received little rainfall in part due to human-caused climate change. Water levels are running desperately low, particularly in poorer areas, resulting in sky-high costs for water and a quickly dwindling supply".

Meanwhile, in Europe there were stories of increasing climate-related risks for everyday citizens of the region. For example, ***Guardian* correspondent Ajit Niranjan reported**, "Europe is not prepared for the rapidly growing climate risks it faces, the European Environment Agency (EEA) has said in its first risk assessment. From wildfires burning down homes to violent weather straining public finances, the report says more action is needed to address half of the 36 significant climate risks with potentially severe consequences that it identifies for Europe. Five more risks need urgent action, the report says. "Our new analysis shows that Europe faces urgent climate risks that are growing faster than our societal preparedness," said Leena Ylä-Mononen, the EEA's executive director. The report looks at how severe the climate threats are and how well prepared Europe is to deal with them. It says the most pressing risks – which are growing worse as fossil fuel pollution heats the planet – are heat stress, flash floods and river floods, the health of coastal and marine ecosystems, and the need for solidarity funds to recover from disasters. When the researchers reassessed six of the risks for southern Europe, which they described as a "hotspot" region, they found urgent action was also needed to keep crops safe and to protect people, buildings and nature from wildfires". As a second example, ***Associated Press* journalists Carlos Mureithi**

"Europe is not prepared for the rapidly growing climate risks it faces, the European Environment Agency has said in its first risk assessment. From wildfires burning down homes to violent weather straining public finances, the report says more action is needed to address half of the 36 significant climate risks with potentially severe consequences that it identifies for Europe. Five more risks need urgent action, the report says."

Residents help firefighters try to extinguish a wildfire burning near Athens, in July 2023. Photo: Miloš Bičanski/*Getty Images*.

and Dana Beltaji wrote, "Europe is facing growing climate risks and is unprepared for them, the European Environment Agency said in its first-ever risk assessment for the bloc… The agency said Europe is prone to more frequent and more punishing weather extremes – including increasing wildfires, drought, more unusual rainfall patterns and flooding – and it needs to immediately address them in order to protect its energy, food security, water and health. These climate risks "are growing faster than our societal preparedness," Leena Ylä-Mononen, the EEA's executive director, said in a statement. The report identified 36 major climate risks for the continent, such as threats to ecosystems, economies, health and food

systems, and found that more than half demand greater action now. It classified eight as needing urgent attention – like conserving ecosystems, protecting people against heat, protecting people and infrastructure from floods and wildfires, and securing relief funds for disasters".

Last, many ***political*** and ***economic***-themed media stories about climate change or global warming were evident in March 2024 coverage. For instance, International Energy Agency statements regarding the need for greater clean energy investments and larger emissions cuts grabbed media attention. For example, ***Wall Street Journal*** **correspondent Giulia Petroni wrote**, "Global carbon-dioxide emissions reached a record high last year as extreme droughts hampered hydroelectric production across large economies, leading to a substantial increase in fossil fuel use, according to the International Energy Agency. Energy-related CO2 emissions rose by 410 million metric tons, or 1.1% year-on-year, reaching 37.4 billion tons in 2023, the Paris-based organization said Friday in its latest report. The use of fossil fuels to replace hydropower accounted for over 40% of the increase. In India and China, heavy reliance on coal and higher electricity demand following the postpandemic economic recovery pushed emissions significantly higher, offsetting reductions in other economies. Emissions rose more than 7% on year in India, where a weaker monsoon season drove hydropower output lower. In China, emissions from energy combustion rose by 5.2% to 12.6 billion tons—by far the largest on a global scale despite the country's leading position in the deployment of clean-energy technology. The agency's report refers to emissions from all uses of fossil fuels for energy purposes and industrial processes. In advanced economies instead, emissions fell 4.5% to a 50-year low last year, supported by a stronger deployment of renewables and energy-efficiency measures, but also weaker industrial production and milder weather in some regions resulting in lower energy demand. According to the agency, electricity generation from renewable sources and nuclear power in those economies reached 50% of total generation. Renewables alone accounted for 34% of electricity output, while the share of coal fell to a historic low of 17%. In the European Union, emissions from energy combustion fell by almost 9% in 2023 driven by a surge in renewables generation and drop in both coal and gas generation, despite economic growth of around 0.7%. In the U.S., emissions fell 4.1% on higher electricity generation from renewables and gas rather than coal, in spite of economic growth of 2.5%. Still, the deployment of clean-energy sources remains overly concentrated in advanced economies and China, the IEA

"Global carbon-dioxide emissions reached a record high last year as extreme droughts hampered hydroelectric production across large economies, leading to a substantial increase in fossil fuel use, according to the International Energy Agency. Energy-related CO2 emissions **rose by 410 million metric tons**, or 1.1% year-on-year, reaching 37.4 billion tons in 2023."

Smoke stacks in Liaoning province, China. Photo: Qilai Shen/ *Bloomberg News*.

Figure 3. Examples of newspaper front pages with climate change stories in March 2024.

said, calling for greater international efforts to increase investment and deployment in emerging and developing economies. Overall, the pace of global emissions growth slowed down in 2023, supported by the expansion of renewable energy and electric vehicles, the IEA said. In 2022, energy-related CO2 emissions rose by 1.3%".

In the US, there was abundant media coverage in late March about the Environmental Protection Agency (EPA) release of transportation-related rules to reduce emissions from vehicles. For example, ***Washington Post* journalist Maxine Joselow wrote**, "Rayan Makarem worries about the air that his 2-year-old daughter breathes. More than 100 diesel-powered trucks rumble through their neighborhood every half an hour, spewing harmful pollutants linked to asthma and other health conditions. The pollution in their community – and others like it nationwide – will be curbed under a climate change rule the Environmental Protection Agency finalized Friday. The rule will require manufacturers to slash emissions of greenhouse gases from new trucks, delivery vans and buses. Those limits, in turn, will reduce deadly particulate matter and lung-damaging nitrogen dioxide from such vehicles…The EPA rule follows strict emissions limits for gas-powered cars aimed at accelerating the nation's halting transition to electric vehicles. It marks the first time in more

than two decades that the federal government has cracked down on pollution from diesel trucks. The rule doesn't go as far as Makarem and other environmental justice advocates would like. The Moving Forward Network had urged the EPA to require all new trucks to be zero-emission by 2035. Yet EPA officials said the rule will not mandate the adoption of a particular zero-emission technology. Rather, it will require manufacturers to reduce emissions by choosing from several cleaner technologies, including electric trucks, hybrid trucks and hydrogen fuel-cell vehicles. Still, the rule stands to benefit poor, Black and Latino communities that are disproportionately exposed to diesel exhaust from highways, ports and sprawling distribution centers. These communities suffer higher rates of asthma, heart disease and premature deaths from air pollution". Elsewhere, ***New York Times*** **correspondents Coral Davenport and Jack Ewing reported**, "The Biden administration on Friday announced a regulation designed to turbocharge sales of electric or other zero-emission heavy vehicles, from school buses to cement mixers, as part of its multifront attack on global warming. The Environmental Protection Agency projects the new rule could mean that 25 percent of new long-haul trucks, the heaviest on the road, and 40 percent of medium-size trucks, like box trucks and landscaping vehicles, could be nonpolluting by 2032. Today, fewer than 2 percent of new heavy trucks sold in the United States fit that bill. The regulation would apply to more than 100 types of vehicles including tractor-trailers, ambulances, R.V.s, garbage trucks and moving vans. The rule does not mandate the sales of electric trucks or any other type of zero or low-emission truck. Rather, it increasingly limits the amount of pollution allowed from trucks across a manufacturer's product line over time, starting in model year 2027. It would be up to the manufacturer to decide how to comply. Options could include using technologies like hybrids or hydrogen fuel cells or sharply increasing the fuel efficiency of the conventional trucks. The truck regulation follows another rule made final last week that is designed to ensure that the majority of new passenger cars and light trucks sold in the United States are all-electric or hybrids by 2032, up from just 7.6 percent last year. Together, the car and truck rules are intended to slash carbon dioxide pollution from transportation, the nation's largest source of the fossil fuel emissions that are driving climate change and that helped to make 2023 the hottest year in recorded history. Electric vehicles are central to President Biden's strategy to confront global warming, which calls for cutting the nation's emissions in half by the end of this decade".

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APRIL "Leading drivers of the climate crisis"

The historical record encompasses 122 entities linked to 72% of all the fossil fuel and cement CO2 emissions since the start of the industrial revolution. Photo: Nick Oxford/*Reuters*.

Media coverage of climate change or global warming in newspapers around the globe **rose 6%** from March 2024. Coverage **dropped 7%** from April 2023 levels. International wire services **increased 9%** from the previous month, as radio coverage also went **up 4%** from the previous month.

April media coverage of climate change or global warming in newspapers around the globe rose 6% from March 2024. Meanwhile, coverage in April 2024 dropped 7% from April 2023 levels. Of particular note, in April international wire services increased 9% from the previous month, as radio coverage also went up 4% from the previous month. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through April 2024.

At the regional level, April 2024 coverage increased in North America (+2%), Asia (+6%), the European Union (EU) (+10%), Africa (+11%), and Latin America (+26%) compared to the previous month of March. Meanwhile, coverage decreased in Oceania (-19%), and the Middle East (-36%).
At the country level, coverage for example in United States (US) print newspapers – *Los Angeles Times*, *New York Times*, *USA Today*, *Wall Street Journal*, and *Washington Post* – dropped 2% from the previous month while coverage in US television – *ABC*, *CBS*, *CNN*, *Fox News*, *MSNBC*, *NBC*, and *PBS* – increased 3% from March 2024 [see Figure 2].

Our Media and Climate Change Observatory (MeCCO) team continues to provide international and regional assessments of trends in coverage, along with country-level appraisals each month. Visit our **website** for open-source datasets and downloadable visuals.

Moving to the content of April 2024 coverage, there were many media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. At the beginning of the month, flooding in the Middle East – with connections to a changing climate – pervaded international media attention. For example, ***CNN* correspondents Nadeen Ebrahim, Mary Gilbert and Brandon Miller reported**, "Chaos ensued in the United Arab

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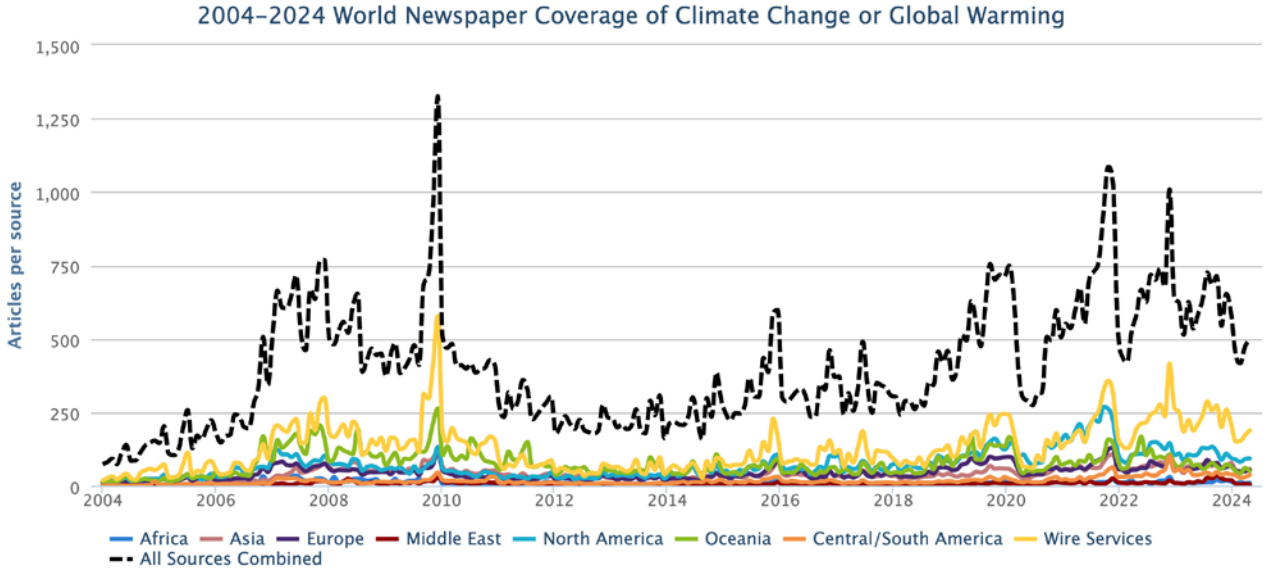

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through April 2024.

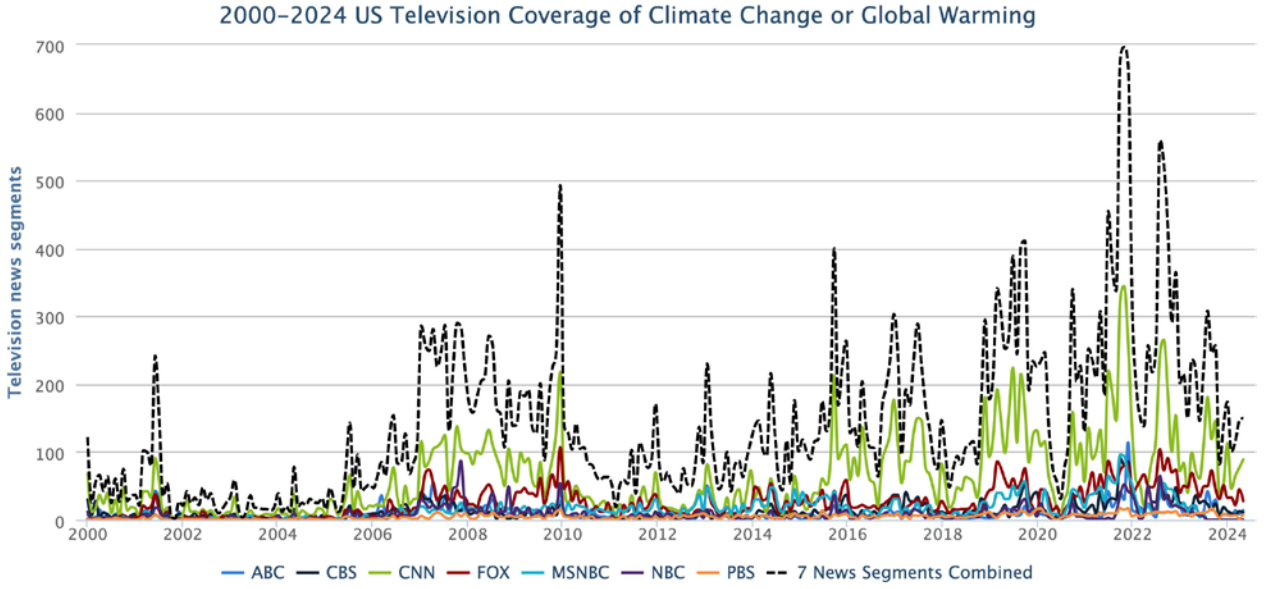

Figure 2. US television coverage of climate change or global warming from January 2000 through April 2024.

Emirates after the country witnessed the heaviest rainfall in 75 years, with some areas recording more than 250 mm (around 10 inches) of precipitation in fewer than 24 hours, the state's media office said in a statement Wednesday. The rainfall, which flooded streets, uprooted palm trees and shattered building facades, has never been seen in the Middle Eastern nation since records began in 1949. In the popular tourist destination Dubai, flights were canceled, traffic came to a halt and schools closed. One-hundred millimeters (nearly 4 inches) of rain fell over the course of just 12 hours on Tuesday, according to weather observations at the airport – around what Dubai usually records in an entire year, according to United Nations data. The rain fell so heavily and so quickly that some motorists were forced to abandon their vehicles as the floodwater rose and roads turned into rivers. Extreme rainfall events like this are becoming more common as the atmosphere warms due to human-driven climate change. A warmer atmosphere is able to soak up more moisture like a towel and then ring it out in the form of flooding rainfall. The weather conditions were associated with a larger storm system traversing the Arabian Peninsula and moving across the Gulf of Oman. This same system is also bringing

unusually wet weather to nearby Oman and southeastern Iran. In Oman, at least 18 were killed in flash floods triggered by heavy rain, the country's National Committee for Emergency Management said. Casualties included schoolchildren, according to Oman's state news agency".

Elsewhere, ***New York Times* journalists Zia ur-Rehman and Christina Goldbaum noted**, "A deluge of unseasonably heavy rains has lashed Pakistan and Afghanistan in recent days, killing more than 130 people across both countries, with the authorities forecasting more flooding and rainfall, and some experts pointing to climate change as the cause. In Afghanistan, at least 70 people have been killed in flash floods and other weather-related incidents, while more than 2,600 homes have been destroyed or damaged, according to Mullah Janan Sayeq, a spokesman for the Ministry of Disaster Management. At least 62 people have died in the storms in neighboring Pakistan, which has been hammered by rainfall at nearly twice the average rate for this time of year, according to Pakistani officials. Khyber Pakhtunkhwa Province, the Pakistani region bordering Afghanistan, appears to be the hardest hit. Flash floods and landslides caused by torrential rains have damaged homes and destroyed infrastructure. Photos and videos from the province show roads turned into raging rivers, and homes and bridges being swept away".

"The World Meteorological Organization warned in a report this week that Asia remained "the **world's most disaster-hit region** from weather, climate and water-related hazards in 2023".

A man cools off in street during the heatwave in West Bengal, India. Photo: Jit Chattopadhyay/SOPA Images/*REX/Shutterstock*.

As the month of April continued, a heat wave in Southeast Asia – with connections to climate change – made news. For example, ***Guardian* correspondent Rebecca Ratcliffe reported**, "Millions of people across South and Southeast Asia are facing sweltering temperatures, with unusually hot weather forcing schools to close and threatening public health. Thousands of schools across the Philippines, including in the capital region Metro Manila, have suspended in-person classes. Half of the country's 82 provinces are experiencing drought, and nearly 31 others are facing dry spells or dry conditions, according to the UN, which has called for greater support to help the country prepare for similar weather events in the future. The country's upcoming harvest will probably be below average, the UN said. April and May are usually the hottest months in the Philippines and other countries in south-east Asia, but temperatures this year have been worsened by the El Niño event, which brings hotter, drier conditions to the region. Thai authorities said 30 people had been killed by heatstroke so far this year, and warned people to avoid outdoor activities. Demand for electricity soared to a new high on Monday night of 35,830 megawatts, as people turned to air conditioning for relief, local media reported…The World Meteorological Organization warned in a report this week that Asia remained "the world's most disaster-hit region from weather, climate and water-related hazards in 2023". Floods and storms caused the highest number of reported casualties and economic losses, it said, while the impact of heatwaves became more severe. Last year, severe heatwaves in India in April and June caused about 110 reported deaths due to heatstroke. "A major and prolonged heatwave affected much of South-east Asia in April and May, extending as far west as

Bangladesh and Eastern India, and north to southern China, with record-breaking temperatures," WMO said. Human-caused climate breakdown is supercharging extreme weather across the world, driving more frequent and more deadly disasters from heatwaves to floods to wildfires. At least a dozen of the most serious events of the last decade would have been all but impossible without human-caused global heating". Meanwhile, ***New York Times*** **correspondent Saif Hasnat and Mike Ives noted**, "Asia's heat wave isn't happening in a meteorological vacuum. Last year was Earth's warmest by far in a century and a half. And the region is in the middle of an El Niño cycle, a climate phenomenon that tends to create warm, dry conditions in Asia. Asia's summer monsoon will bring relief, but it's still weeks away. In Thailand on Monday, the national forecast called for "hot to very hot weather." It put the chances of rain in Bangkok, the capital, at zero percent". Reporting **from *The Daily Star* in Bangladesh also documented**, "At least 23 days of this month were heatwave days, which equals the record set in 2019 for the entire year…Recently published BMD report "Changing Climate of Bangladesh" observed that the minimum and maximum temperatures increased in the country but the maximum temperatures increased more rapidly".

Several other ***meteorological*** themed media stories were published on climate change or global warming. For example, experts blame warming waterspouts of water in Dubai. ***El País*** **journalist Manuel Planelles wrote**, "On April 14 and 15, impressive rains hit the United Arab Emirates (UAE) and northern Oman. In Dubai, where rainfall was concentrated on April 15, all previous records for daily rainfall in the last 75 years were surpassed, when records began, according to the Government of this country (…) "Cloud seeding did not have a significant influence on the event," concludes a report prepared by a group of scientists from World Weather Attribution (WWA). In this case, the WWA considers that warming has contributed to making these rains stronger".

"On April 14 and 15, impressive rains hit the United Arab Emirates and northern Oman. In Dubai, where rainfall was concentrated on April 15, all previous records for daily rainfall in the last 75 years were surpassed, when records began".

Screenshot from **video** on El País. Credit *EPV*.

Over in Europe, ***La Vanguardia*** **journalist Antonio Cerrillo noted**, "The year 2023 was the first or second warmest year in Europe as a whole since records have been recorded (depending on whether Greenland data is taken into account). The average temperature in the Old Continent last year was 1°C higher than the 1991-2020 average, according to the report on the climate in Europe from the World Meteorological Organization (WMO) and the EU Copernicus program. But the most relevant thing is that, while the entire planet records a temperature rise of 1.4°C compared to the time pre-industrial, in Europe the rise is 2.6°C. Why that difference? Since the 1980s, Europe has been warming twice as much as the world average. It is the continent that most rapidly experiences this process. This is mainly due to the greater proportion of European land in the Arctic, the fastest warming region on Earth (3°C since the 1970s)".

Some media coverage in the month of April 2024 featured related and ongoing ***cultural***-themed stories relating to climate change or global warming. To illustrate, connections between climate change and public health were documented in several news stories. For example, ***BBC*** **journalists Esme Stallard and Owen Pinnell**

reported, "A father has started legal action against UK oil giant BP over the death of his 21-year-old son. Hussein Julood alleges the burning off of gas at a BP-run oil field in Iraq – a practice known as flaring – caused his son Ali's leukemia. A *BBC World Service* investigation in 2022 found Ali's village, which lies within the field, had high levels of cancer-causing pollutants known to come from flaring. BP said "we understand the concerns" and are supporting change. The case is believed to be the first time an individual has started legal action against a major oil firm over its flaring practices… The deadly impact of the oil giants' toxic air pollution on children and the planet is revealed in this BBC News Arabic investigation from the front line of climate change in Iraq".

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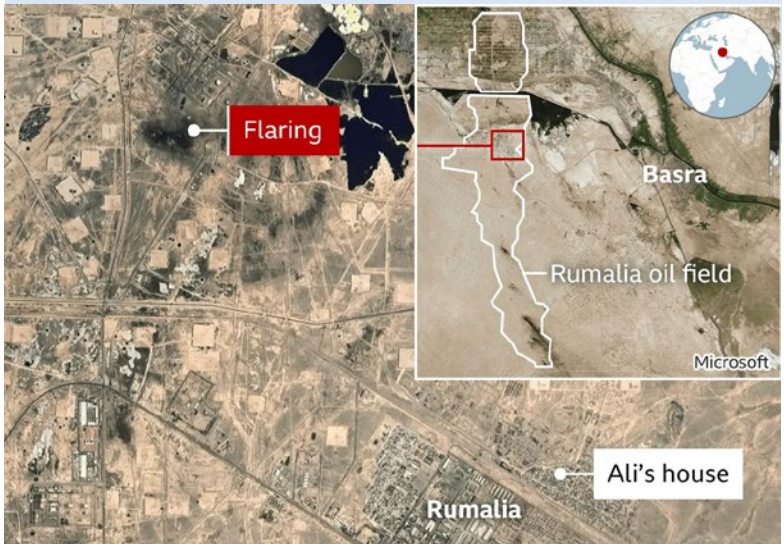

Ali's house lies within the boundaries of Rumaila oil field. Credit: *BBC*.

Next, several ***political*** and ***economic***-themed media stories about climate change or global warming comprised a subset of April 2024 coverage. In another instance, there were stories across Europe about a court ruling in Switzerland that human rights were violated by failing to adequately address climate change. For example, ***BBC* correspondent Georgina Rannard reported**, "A group of older Swiss women have won the first ever climate case victory in the European Court of Human Rights. The women, mostly in their 70s, said that their age and gender made them particularly vulnerable to the effects of heatwaves linked to climate change. The court said Switzerland's efforts to meet its emission reduction targets had been woefully inadequate". Elsewhere, ***Wall Street Journal* reporter Yusuf Khan noted**, "The European Court of Human Rights (ECHR) on Tuesday ruled in favor of a group of elderly Swiss women who argued that their government isn't doing enough to fight climate change, putting them at risk of death from heat waves. In what is being seen as a landmark case in the fight against climate change, the ECHR ruled 16 votes to one in favor of the women's' claims that Swiss authorities aren't taking sufficient action to mitigate the effects of climate change, under the European Convention on Human Rights. In particular, the court found that the convention "encompasses a right to effective protection by the State authorities from the serious adverse effects of climate change on lives, health, well-being and quality of life." Given this, it said current efforts by the Swiss government were lacking, including a failure to quantify national greenhouse-gas-emission limitations. More than 2,000 women from across Switzerland brought the claim. The ruling sets an important precedent for governments in their bid to protect citizens against the effects of climate change. Lawyers are suggesting it could influence legislation in other European countries. It is the first time the powerful court has ruled on global warming".

As a third example, ***El País* journalist Manuel Planelles reported**, "Around 2,000 women banded together to take their government to court because they claimed its lack of action puts them at risk of dying, for example, during a heat wave. It is the first time that this court has ruled on the lack of action by state authorities against global warming. The European Convention on Human Rights (ECHR) does not include any right to a healthy environment as such. But the ECHR has issued several rulings in this environmental matter, understanding that the exercise of certain rights of the convention may be undermined by the existence of damage to the environment and exposure to environmental risks. This is the route used by the complainants, who have received the support of environmental organizations, to reach this international court".

Last, April 2024 media stories featured several ***scientific*** themes in stories during the month. To begin, news broke from a National Oceanic and Atmospheric Administration (NOAA) report that carbon dioxide, methane and nitrous oxide gases reached record levels in the atmosphere. For example, ***Guardian* correspondent Oliver Milman wrote**, "The levels of the three most important heat-trapping gases in the atmosphere reached new record highs again last year, US scientists have confirmed, underlining the escalating challenge posed by the climate crisis. The global concentration of carbon dioxide, the most important and prevalent of the greenhouse gases emitted by human activity, rose to an average of 419 parts per million in the atmosphere in 2023 while methane, a powerful if shorter-lasting greenhouse gas, rose to an average of 1922 parts per billion. Levels of nitrous oxide, the third most significant human-caused warming emission, climbed slightly to 336 parts per billion. Through the burning of fossil fuels, animal agriculture and deforestation, the world's CO2 levels are now more than 50% higher than they were before the era of mass industrialization. Methane, which comes from sources including oil and gas drilling and livestock, has surged even more dramatically in recent years, NOAA said, and now has atmospheric concentrations 160% larger than in pre-industrial times. NOAA said the onward march of greenhouse gas levels was due to the continued use of fossil fuels, as well as the impact of wildfires, which spew carbon-laden smoke into the air. Nitrous oxide, meanwhile, has risen due to the widespread use of nitrogen fertilizer and the intensification of agriculture".

"The levels of the three most important heat-trapping gases in the atmosphere reached new record highs again last year, US scientists have confirmed, underlining the escalating challenge posed by the climate crisis."

A woman protects herself from the sun in São Paulo, Brazil. Photo: Sebastião Moreira/*EPA*.

Then in mid-April a new study linking lost global income and global warming earned news attention. For example, ***Associated Press* journalist Seth Borenstein wrote**, "Climate change will reduce future global income by about 19% in the next 25 years compared to a fictional world that's not warming, with the poorest areas and those least responsible for heating the atmosphere taking the biggest monetary hit, a new study said. Climate change's economic bite in how much people make is already locked in at about $38 trillion a year by 2049, according to Wednesday's study in the journal Nature by researchers at Germany's Potsdam Institute for Climate Impact Research. By 2100 the financial cost could hit twice what previous studies estimate. "Our analysis shows that climate change will cause massive economic damages within the next 25 years in almost all countries around the world,

Figure 3. Examples of newspaper front pages with climate change stories in April 2024.

also in highly-developed ones such as Germany and the U.S., with a projected median income reduction of 11% each and France with 13%," said study co-author Leonie Wenz, a climate scientist and economist. These damages are compared to a baseline of no climate change and are then applied against overall expected global growth in gross domestic product, said study lead author Max Kotz, a climate scientist. So while it's 19% globally less than it could have been with no climate change, in most places, income will still grow, just not as much because of warmer temperatures".

Then in late April, a study from Carbon Majors Database about culpability and climate change generated several news accounts. For example, ***Guardian* journalist Jonathan Watts reported**, "A mere 57 oil, gas, coal and cement producers are directly linked to 80% of the world's global fossil CO2 emissions since the 2016 Paris climate agreement, a study has shown. This powerful cohort of state-controlled corporations and shareholder-owned multinationals are the leading drivers of the climate crisis, according to the Carbon Majors Database, which is compiled by world-renowned researchers. Although governments pledged in Paris to cut greenhouse gases, the analysis reveals that most mega-producers increased their output of fossil fuels and related emissions in the seven years after that climate agreement, compared with the seven years before. In the database of 122 of the world's biggest historical climate polluters, the researchers found that 65% of state entities and 55% of private-sector companies had scaled up production. During this period, the biggest investor-owned contributor to emissions was ExxonMobil of the United States, which was linked to 3.6 gigatons of CO2 over seven years, or 1.4% of the global total. Close behind were Shell, BP, Chevron and TotalEnergies, each of which was associated with at least 1% of global emissions. The most striking trend, however, was the surging growth of emissions related to state and state-owned producers, particularly in the Asian coal sector. This expansion, which has continued since, runs contrary to a stark warning by the International Energy Agency that no new oil and gas fields can be opened if the world is to stay within safe limits of global heating. Climate scientists say global temperatures are rapidly approaching the lower Paris target of 1.5C above the pre-industrial era, with potentially dire consequences for people and the rest of nature".

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MAY "If it hasn't pushed you over the edge yet, just wait"

Kristin Peterson tries to cool off with a cold bandana at Sonrise Homeless Navigation Center in Austin, Texas. Photo: Jay Janner/*Austin American-Statesman via AP*.

Media coverage of climate change or global warming in newspapers around the globe **crept up nearly 1%** from April 2024. Coverage was **down 13%** from May 2023 levels. International wire services **increased 16%** from the previous month, as radio coverage also went **up 46%** from the previous month.

May media coverage of climate change or global warming in newspapers around the globe crept up nearly 1% from April 2024. Meanwhile, coverage in May 2024 was down 13% from May 2023 levels. In May, international wire services increased 16% from the previous month, as radio coverage also went up 46% from the previous month. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through May 2024.

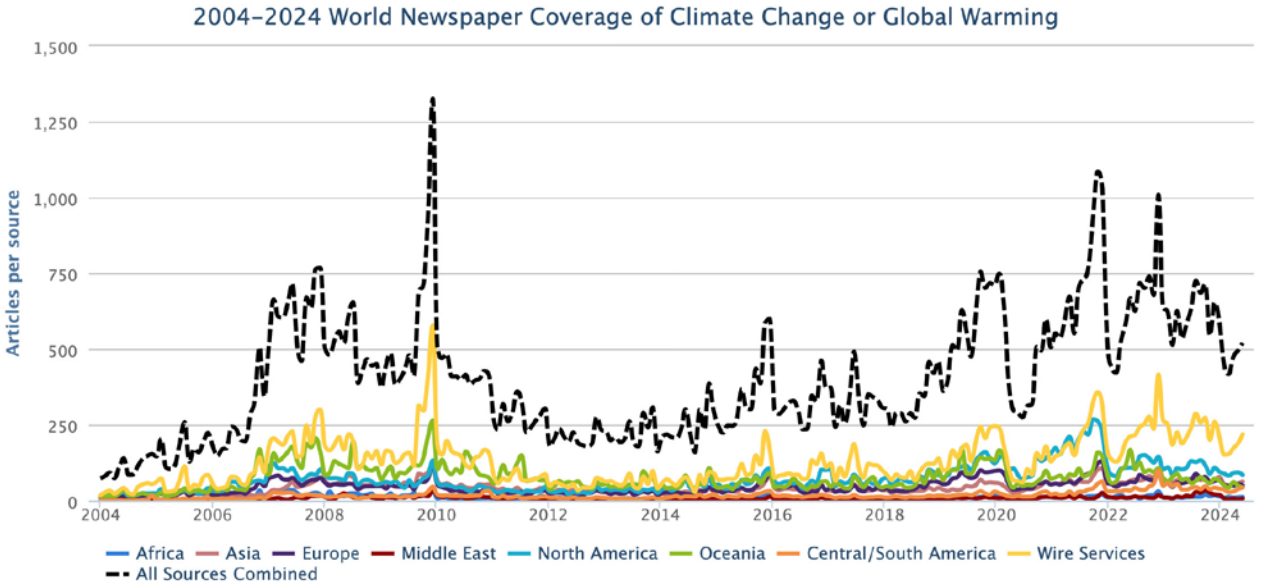

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through May 2024.

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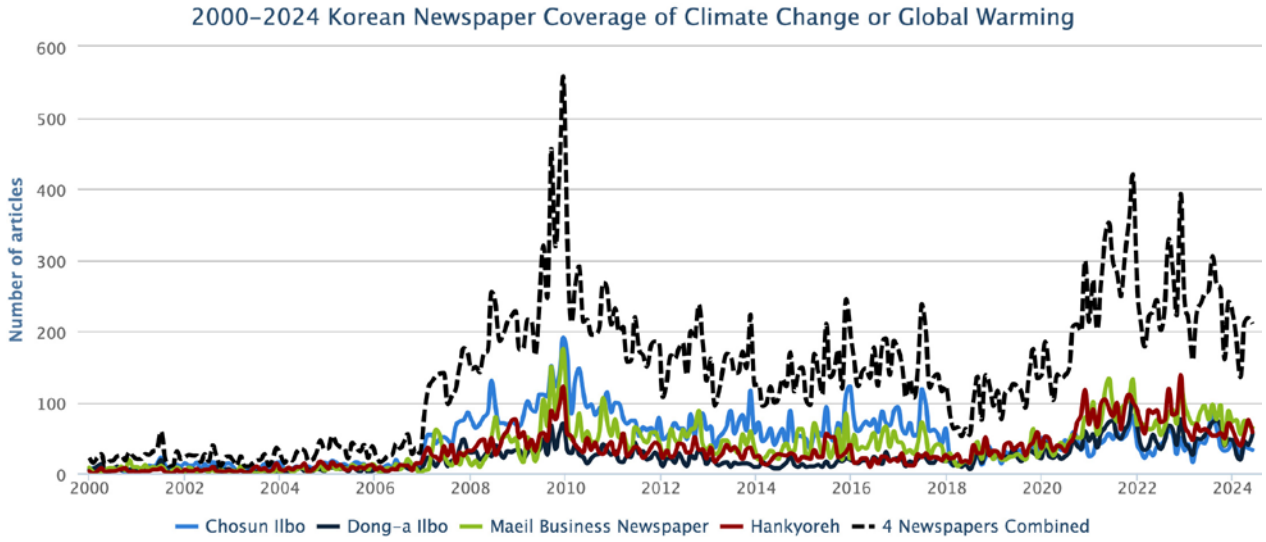

Figure 2. Korean newspaper coverage of climate change or global warming from January 2000 through May 2024.

At the regional level, levels of May 2024 coverage was mixes: it decreased in the European Union (EU) (-9%), Oceania (-13%), and North America (-9%) compared to the previous month of April. Meanwhile, coverage rose in Asia (+9%), Africa (+10%), Latin America (+16%) and the Middle East (+52%). At the country level, coverage for example in Korean print newspapers – *Chosun Ilbo*, *Dong-a Ilbo*, *Maeil Business Newspaper*, and *Hankyoreh* – dropped 4% from the previous month [Figure 2].

Our Media and Climate Change Observatory (MeCCO) team continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for **open-source datasets and downloadable visuals**. Our team includes:

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Anne Gammelgaard Ballantyne (Aarhus University, Denmark)
Max Boykoff (University of Colorado Boulder, USA)
Catherine Bruns (University of Minnesota, USA)
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Olivia Pearman (US Geological Survey, USA)
Lars Kjerulf Petersen (Aarhus University, Denmark)
Anne Hege Simonsen (Oslo Metropolitan University, Norway)
Andreas Ytterstad (Oslo Metropolitan University, Norway)

Moving to considerations of content, May 2024 media stories featured several ***scientific*** themes in stories during the month. To illustrate, the month of news stories began with attention paid to Copernicus Climate Service findings that April 2024 marked the 11th month in a row when global average temperatures reached record high levels. For example, ***Los Angeles Times*** **reporter Hayley Smith wrote**, "Earth's simmering hot streak has stretched 11 months, with April breaking yet another global temperature record. It was warmer than any April on record, with an average surface temperature of 59.05 degrees, officials with the European Union's Copernicus Climate Change Service announced this week. It was about 0.25 of a degree warmer than the previous April high, in 2016". Elsewhere, ***CNN*** **journalist Laura Paddison reported**, "Extraordinary global heat continues its streak. Last month, the world endured the hottest April on record, according to new data from Copernicus, the European Union's climate monitoring service. It marks 11 consecutive months of unprecedented global temperatures. With that new data point, some scientists warn there is a strong chance 2024 could beat 2023 as the warmest year on record. Last month was 1.58 degrees Celsius warmer than the average April in the era before industrialization and 0.67 degrees above the average April between 1991 and 2020, Copernicus found. The impacts have been stark. Swaths of Asia have been grappling with deadly heat: schools were closed for millions of children in Bangladesh, rice fields have shriveled in Vietnam, and people in India battled 110 degree Fahrenheit temperatures to vote in recent elections. Global ocean heat in April was also record-breaking for the 13th consecutive month. Ocean surface temperatures reached 21.04 degrees, the highest on record for any April, and just a fraction below the overall record set in March, according to Copernicus data. The impact on marine systems is devastating. A mass coral bleaching event occurred this spring, which scientists said at the time could be the worst on record".

Later in the month, excessive heat and mortality linked to climate change earned media attention. For example, ***Associated Press*** **journalists Seth Borenstein, Mary Katherine Wildeman and Anita Snow reported**, "The death certificates of more than 2,300 people who died in the United States last summer mention the effects of excessive heat, the highest number in 45 years of records, according to an Associated Press analysis of Centers for Disease Control and Prevention data. With May already breaking heat records, 2024 could be even deadlier. And more than two dozen doctors, public health experts, and meteorologists told the AP that last year's figure was only a fraction of the real death toll. Coroner, hospital, ambulance and weather records show America's heat and health problem at an entirely new level… In some places, last year's heat already rivals the worst on record. As of late May, Miami was on track to be 1.5 degrees warmer than the hottest May on record, according to McNoldy. Dallas' Murphy pointed to maps saying conditions with a broiling Mexico are "eerily similar to what we saw last June" so he is worried about "a very brutal summer." Texas A&M's [Andrew] Dessler said last year's heat was "a taste of the future." "I just think in 20 years, you know, 2040 rolls around … we're going to look back at 2023 and say, man,

"The death certificates of more than **2,300 people who died** in the United States last summer mention the effects of **excessive heat**, the highest number in 45 years of records, according to an Associated Press analysis of Centers for Disease Control and Prevention data. With May already breaking heat records, 2024 could be even deadlier."

Jessie Fuentes, walks along the Rio Grande. Photo: Eric Gay/*AP*.

that was cool," Dessler said. "The problem with climate change is if it hasn't pushed you over the edge yet, just wait"".

Also in May 2024, there were several ongoing media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. Throughout the month, heat waves linked to climate change or global warming garnered media attention. For example, ***Guardian* environment editor Damien Carrington reported**, "The record-breaking heatwave that scorched the Philippines in April would have been impossible without the climate crisis, scientists have found. Searing heat above 40C (104F) struck across Asia in April, causing deaths, water shortages, crop losses and widespread school closures. The extreme heat was made 45 times more likely in India and five times more likely in Israel and Palestine, the study found. The scientists said the high temperatures compounded the already dire humanitarian crisis in Gaza, where displaced people are living in overcrowded shelters with little access to water. The results of the latest study to assess the role of human-caused global heating in worsening extreme weather shows how severe the impacts are already, with only 1.2C of average heating above preindustrial levels over the past four years. Another "impossible" heatwave hit west Africa and the Sahel in late March, again causing deaths, and reaching 48.5C in Mali. Deaths from extreme heat are poorly recorded in many countries but previous research suggests millions of people have died early over the past two decades. In Europe, where recording is better, heat-related deaths rose by 25% in the past decade. The scientists warned of worse to come. If global temperature rises to 2C, repeats of April's extreme heat will be expected every two to three years in the Philippines and every five years in Israel, Palestine and nearby countries. Hundreds of the world's top climate scientists told the Guardian recently that they expected global inaction in ending fossil fuel burning to result in at least 2.5C of heating". Moreover, in Europe, ***El País* journalist Manuel Planelles noted**, "it is happening with the increase in heat-related deaths or with the improvement of conditions for pathogens and vectors of climate-sensitive diseases, such as Vibrio, West Nile virus, dengue, chikungunya, Zika, malaria and leishmaniasis… but the distribution of the problem is not the same throughout the continent: the population in the south of the region is suffering more from the impacts of this crisis, also warn the specialists who have been in charge of carrying out this research, which is published in *The Lancet Public Health* magazine is also not the same within each country: the most disadvantaged groups suffer more from the negative effects, and mortality from high temperatures is twice as high in women as in men, according to the study. Addressing the climate crisis as a public health problem is essential to be able to face the consequences of warming that is making it normal for all temperature records to be broken day in and day out (last April was the warmest April ever recorded on the planet; and the same thing has been happening for the last 11 months)".

"Searing heat above 40C (104F) struck across Asia in April, causing deaths, water shortages, crop losses and widespread school closures."

A man tries to cool himself during hot temperatures in Manila, Philippines, in April. Photo: Aaron Favila/*AP*.

Amidst voting in India, heat waves – with connections to climate change – posed threats in the month of May. For example, ***Hindustan Times* reporter Debabrata Mohanty noted**, "At least 85 people died of suspected heat stress and related issues in Odisha, Bihar, Jharkhand, Rajasthan and Uttar Pradesh in 24 hours, senior officials in these regions said on Friday, amid an unforgiving heat spell that

has pushed temperatures to unprecedented levels in many of these regions". Moreover, ***CBS News* correspondent Emily Mae Czachor reported**, "A temperature reading collected in Delhi, India's capital territory, may have broken national records as the country grapples with a blistering heat wave. The reading – 52.9 degrees Celsius or 126.1 degrees Fahrenheit – was preliminary and technically an outlier compared with others taken in Delhi on the same day, officials said. But, if confirmed, it would be the highest temperature ever registered anywhere in India. The temperature reading came from a substation in Mungeshpur, a neighborhood in Delhi. Located in the northwest, India's capital territory – which includes its capital city, New Delhi – is home to almost 30 million people and covers about 600 square miles of land. The Indian Meteorological Department said in a news release that the reading out of Mungeshpur could be due to a sensor issue or some other error, and that it would examine the data and the sensor. In Delhi, substations in various locations generally registered temperatures between 45.2 degrees and 49.1 degrees Celsius, which corresponds roughly to 113 degrees and 120 degrees Fahrenheit. Amid the heat wave, people in Delhi as well as the northern states Punjab, Haryana, Rajasthan, Madhya Pradesh and Uttar Pradesh were advised to avoid heat exposure under a "red" weather alert… Heat waves are most common in India during this time of year, according to the meteorological service, which says they tend to happen between March and June, with peak heat in May. But heat waves in the region have been especially treacherous recently. In April, hundreds of people across Asia died as a result of extremely high temperatures, in India, Bangladesh, Thailand and Gaza, as well as other places. In India, that heat wave drove triple-digit temperatures in a number of areas, including in the eastern city of Bhagora where the temperature approached 115 degrees Fahrenheit. The weather damaged crops and forced school closures that came prematurely, weeks ahead of the planned summer break. A study on the extreme weather released earlier this month by the organization World Weather Attribution said climate change amplified what

> "At least 85 people died of suspected heat stress and related issues in Odisha, Bihar, Jharkhand, Rajasthan and Uttar Pradesh in 24 hours, senior officials in these regions said, amid an unforgiving heat spell that has pushed temperatures to unprecedented levels in many of these regions."

Several places in Odisha recorded temperatures above 45°C. Photo: hindustantimes.com/*PTI*.

may have already been a strong heat wave to make it especially severe. Around that time, Raghu Murtugudde, a climate scientist at the Indian Institute of Technology Mumbai, told CBS News that El Niño may have played a role as well".

Elsewhere, stories linking climate change and extreme flooding were taken up in media stories. For example, covering rainstorms in Brazil ***El País* journalists Jorge C. Carrasco and N. Galarraga wrote**, "The south of Brazil is a showcase of the devastation brought by climate change. The serious damage from the floods in Rio Grande do Sul, with 143 dead and two million affected, puts the focus on the offensive against environmental laws and poor prevention…More than 500,000 people have left their homes, some mayors weigh moving their cities to rebuild them on higher ground, countless families have lost everything. "Some are considering emigrating, becoming climate refugees," says Natalie Unterstell, president of the climate policy study center Talanoa, on the phone. "This could be our Hurricane Sandy or Katrina moment," she adds. This calamity that exposes the fragility of

infrastructure makes politicians and citizens understand that nature does not forgive aggression and that it is essential to act now. Without excuse or delay."

Media coverage in May 2024 also featured related and ongoing ***cultural***-themed stories relating to climate change or global warming as well. To illustrate, connections between climate change, heat waves and health were found in several news stories. For example, ***New York Times*** **journalist Manuela Andreoni reported**, "Gilberto Pozo, a biologist, was monitoring a small forest in the town of Cunduacán, in southern Mexico, in early May when two mantled howler monkeys fell from a tree in front of him with a thud. "They were dehydrated and received treatment," he said. "But they didn't survive." At first, Dr. Pozo and his team at Cobius, a nonprofit conservation group, thought the monkeys had been overcome by smoke from fires set by farmers clearing land nearby. But, as temperatures soared over 100 degrees Fahrenheit in recent weeks, dozens of reports of dead monkeys started popping up. Residents were finding groups of 10 or more dead at a time, many also showing signs of dehydration. As of Wednesday, 147 monkeys have died in the states of Tabasco and Chiapas in southern Mexico. The deaths of dozens of mantled howler monkeys in Mexico may be the latest sign of the danger extreme temperatures pose to wildlife around the world. As global temperatures have shattered records, scientists have recently documented a die-off of Amazon dolphins and a mass bleaching event in the world's coral reefs. Meanwhile, ***Washington Post*** **correspondent Maria Luisa Paúl noted**, "Over the past year, an ongoing and severe drought has parched most of Mexico, draining reservoirs and leaving parts of the country grappling with an acute water crisis. Since mid-March, scorching temperatures have led to at least 26 heat-related deaths, according to the nation's health ministry. The double-whammy of weather phenomena, scientists have warned, is aggravated by climate change – which alters usual weather patterns and results in longer and hotter periods with less rain".

"The serious damage from the floods in Rio Grande do Sul, with 143 dead and two million affected, puts the focus on the offensive against environmental laws and poor prevention...More than 500,000 people have left their homes, some mayors weigh moving their cities to rebuild them on higher ground, countless families have lost everything. Some are considering emigrating, becoming climate refugees. This calamity that exposes the fragility of infrastructure makes politicians and citizens understand that **nature does not forgive aggression and that it is essential to act now**. Without excuse or delay."

Inhabitants of Canoas, Brazil in a gym converted into a shelter, on May 8. Photo: Carlos Macedo/*AP*.

Last, many ***political*** and ***economic***-themed media stories about climate change or global warming were evident in May 2024 coverage. For instance, US Florida Governor Ron DeSantis' signed legislation removing references to climate change in state laws generated media attention. For example, ***Washington Post*** **correspondent Anna Phillips reported**, "Florida will eliminate climate change as a priority in making energy policy decisions, despite the threats it faces from powerful hurricanes, extreme heat and worsening toxic algae blooms. On Wednesday,

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Figure 3. Examples of newspaper front pages with climate change stories in May 2024.

the state's governor, Ron DeSantis, signed the legislation, which is set to go into effect on July 1. The measure also removes most references to climate change in state law, bans offshore wind turbines in state waters and weakens regulations on natural gas pipelines…Supporters say the new law helps the state prioritize a concern of Floridians – energy affordability, which they say is threatened by excessive regulation. But some climate advocates said the measure is largely symbolic and would have little effect on Florida's shift toward renewable energy. Solar power is booming in the state and, despite Republican lawmakers' desire to curb construction of wind turbines, Florida isn't windy enough to have piqued the wind industry's interest…Rather, environmentalists said the new law is the latest example of DeSantis's eagerness to use climate change as a culture war issue such as abortion and transgender rights to bring national attention to himself and hit the right notes with right-wing voters".

In Europe, connected political and economic-themed climate change stories were common in May as well. For example, writing about climate activists suing oil company TotalEnergies in France ***El País*** **journalist Manuel Planelles reported**, "A group of environmental NGOs tries to give it a new twist to climate litigation in France. Yesterday they filed a criminal complaint against the directors and main shareholders of Total Energies. Behind the complaint are three NGOs - the French Bloom and Santé Planétaire and the Mexican Nuestro Futuro—and eight citizens from Australia, Zimbabwe, France, Belgium, the Philippines, Greece and Pakistan who consider themselves victims of extreme phenomena linked to climate change. They argue that behind the climate crisis are companies like TotalEnergies, which have been profiting for decades from fossil fuels that, when burned, emit greenhouse gases that overheat the planet."

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JUNE "The Godfathers of climate chaos"

Firefighters work to extinguish a wildfire in Evros, Greece. Photo: Ayhan Mehmet/*Anadolu via Getty Images*.

Media coverage of climate change or global warming in newspapers around the globe **increased 8%** from May 2024. Coverage in June 2024 **dropped 13%** from June 2023 levels. International wire services **dipped 9%** from the previous month.

June media coverage of climate change or global warming in newspapers around the globe increased 8% from May 2024. Meanwhile, coverage in June 2024 dropped 13% from June 2023 levels. In June, international wire services dipped 9% from the previous month. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through June 2024.

At the regional level, levels of June 2024 coverage went up in Asia (+1%), the Middle East (+9%), Africa (+11%), North America (+11%), the European Union (EU) (+18%), and Oceania (+68%) compared to the previous month of May. Meanwhile, coverage decreased in Latin America (-13%). At the country level, coverage for example in Canadian print newspapers – *Globe & Mail*, *Toronto Star* and *National Post* – increased 10% from the previous month [Figure 2].

Our Media and Climate Change Observatory (MeCCO) team continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for **open-source datasets and downloadable visuals**.

In terms of the content of coverage, there were several ongoing media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. To begin, drought conditions in North Africa – with links to climate change – sparked media coverage. For example, ***The Associated Press*** **reported**, "Violent riots erupted in a drought-stricken Algerian desert city last weekend after months of water shortages left taps running dry and forced residents to queue to access water for their households. In Tiaret – a central Algerian city of less than 200,000 located 155 miles (250 kilometers) southwest of Algiers – protestors wearing balaclavas set tires aflame and set

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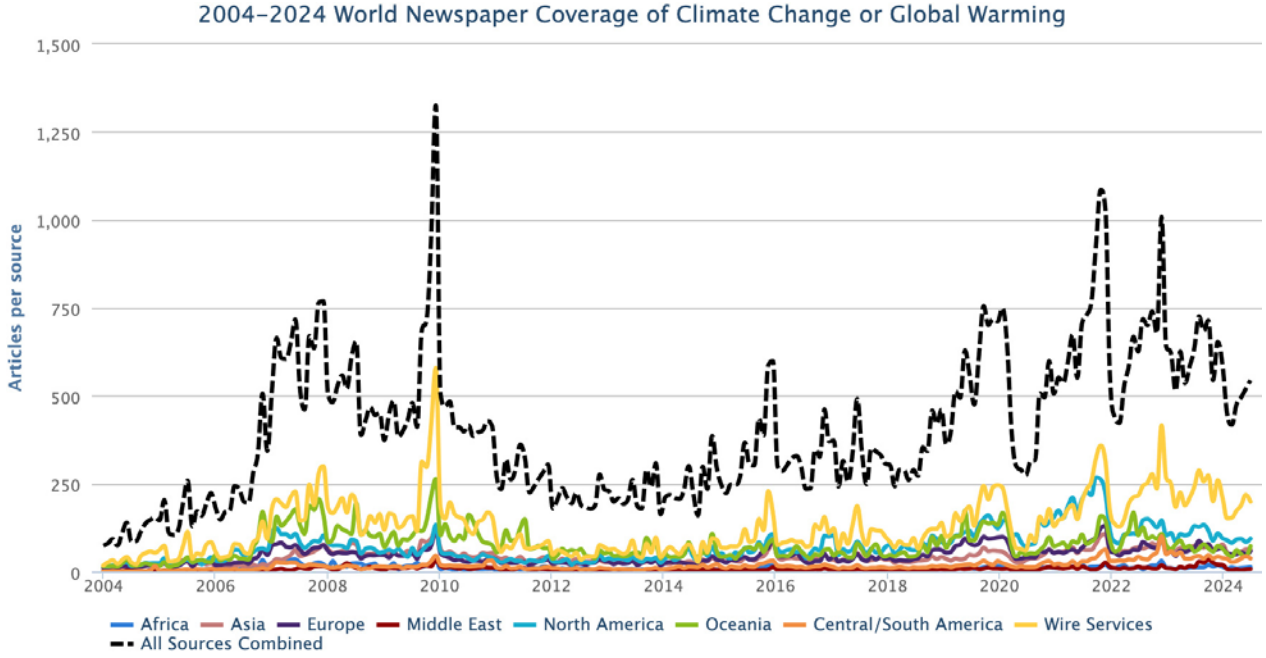

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through June 2024.

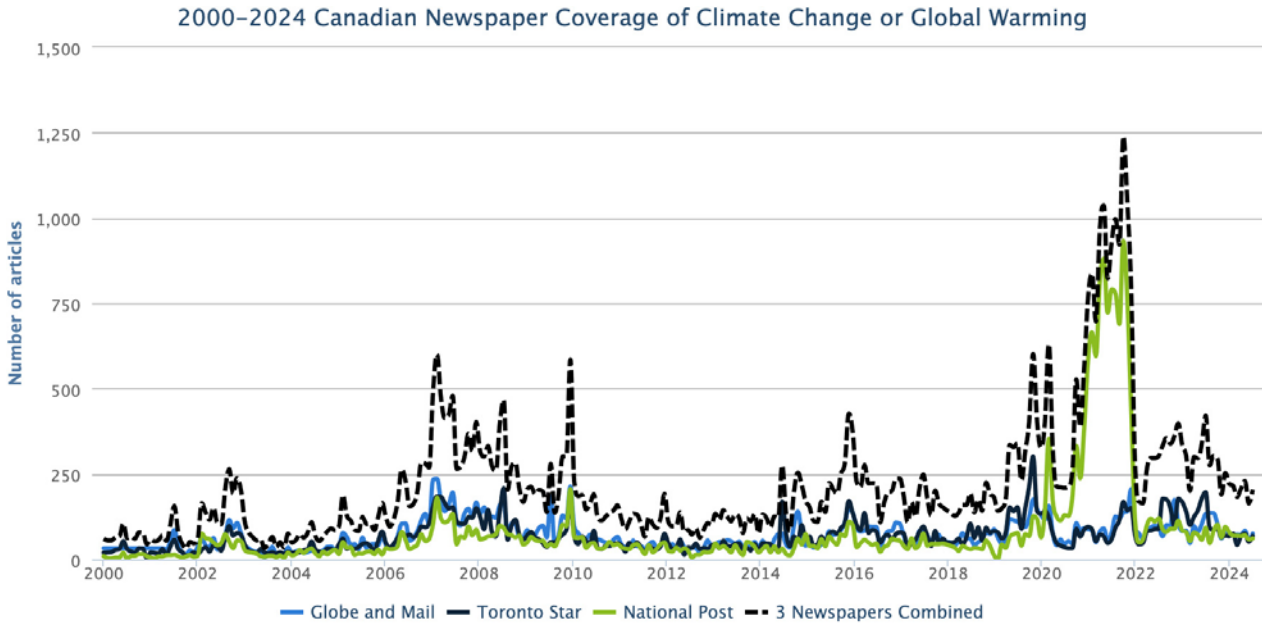

Figure 2. Canadian newspaper coverage of climate change or global warming from January 2000 through June 2024.

up make-shift barricades blocking roads to protest their water being rationed, according to pictures and videos circulating on social media. The unrest followed demands from President Abdelmajid Tebboune to rectify the suffering. At a council of ministers meeting last week, he implored his cabinet to implement "emergency measures" in Tiaret. Several government ministers were later sent to "ask for an apology from the population" and to promise that access to drinking water would be restored. The rioting comes as Tebboune is expected to vie for a second term as president of the oil-rich nation – Africa's largest by area. Northern Africa has been among the world's worst-hit regions by climate change. A multi-year drought has drained critical reservoirs and reduced the amount of rainfall that has historically replenished them".

Elsewhere, ecological health effects associated with climate change made news. For example, in Brazil ***El País*** **journalist Joan Royo noted,**

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"Fire explosion in the largest wetland in the world: Brazil's Pantanal burns. The intensity of the dry season, which begins earlier every year due to climate change, increases fires by 3000%...the Paraguay is the main river of the Pantanal, but in its Brazilian stretch it is three meters below its usual level for June. In May, the National Water Agency declared a "critical" situation in this hydrographic basin for the first time in history. With the lack of rain in recent months, the bushes and grasses are transformed into straw, the perfect fuel. The Pantanal, like the Amazon, usually suffers from the dry season in the second half of the year, but climate change, now aggravated by the effects of El Niño, is increasingly advancing the risk calendar."

"Fire explosion in the largest wetland in the world: Brazil's Pantanal burns. The intensity of the dry season, which begins earlier every year due to climate change, **increases fires by 3000%**"

A man observes the smoke coming from the fire in the Pantanal, in Matto Grosso do Sul, Brazil on June 12. Photo: Ueslei Marcelino/*Reuters*.

Similarly, heat waves across the globe made news in June. In North America, ***Washington Post* correspondent Dan Stillman reported**, "Numerous cities in the Midwest, the Northeast and the Mid-Atlantic are expecting multiple days of extreme heat and high humidity this week into the weekend, raising concerns regarding heat illness, especially for outdoor workers and vulnerable populations. While such temperatures aren't unprecedented, their duration in many locations will be unusually long for this early in the summer. More than 80 million people are under heat alerts, many living in locations predicted to reach the highest levels of the National Weather Service's HeatRisk forecast, which rates the danger to human health. Officials are urging residents to stay hydrated, wear light clothing and take breaks in the shade or indoors if they must be out in the heat for an extended period… The high-pressure heat dome responsible for the dangerous heat could reach a record level of intensity. Research shows that human-caused climate change is enhancing the strength, size and frequency of such events".

Later in June, ***Washington Post* correspondents Sarah Kaplan and Scott Dance reported**, "Dozens of bodies were discovered in Delhi during a two-day stretch this week when even sundown brought no relief from sweltering heat and humidity. Tourists died or went missing as the mercury surged in Greece. Hundreds of pilgrims perished before they could reach Islam's holiest site, struck down by temperatures as high as 125 degrees. The scorching heat across five continents in recent days, scientists say, provided yet more proof that human-caused global warming has so raised the baseline of normal temperatures that once-unthinkable catastrophes have become commonplace. The suffering came despite predictions that a year-long surge of global heat might soon begin to wane. Instead, in the past seven days alone, billions felt heat with climate change-fueled intensity that broke more than 1,000 temperature records around the globe. Hundreds fell in the United States, where tens of millions of people across the Midwest and Eastern Seaboard have been sweltering amid one of the worst early-season heat waves in memory. "It should be obvious that dangerous climate change is already upon us," said Michael Wehner, a climate scientist at Lawrence Berkeley National Laboratory. "People will die because of global warming on this very day." That much of this

week's heat unfolded after the dissipation of the El Niño weather pattern – which typically boosts global temperatures – shows how greenhouse gas pollution has pushed the planet into frightening new territory, researchers say. Scientists had expected this summer might be somewhat cooler than 2023, which was the hottest in the Northern Hemisphere in at least 2,000 years. But with summer 2024 just getting started, there are ominous signs that even more scorching conditions may still be on the horizon".

Yet, the heat wave leading to pilgrims on the Hajj in Saudi Arabia prompted news stories in many outlets as tragedies unfolded. For example, ***Washington Post* correspondent Niha Masih wrote**, "At least six Jordanian pilgrims have died of heatstroke while on the Hajj pilgrimage in Saudi Arabia, Jordan's Foreign Ministry said over the weekend, amid growing concern over the risks that rising temperatures pose to one of the largest gatherings in the world. Temperatures in Mecca, home to Islam's holiest site, reached 120 degrees Fahrenheit (49 degrees Celsius) on Sunday, according to the National Center for Meteorology. Jordan's Foreign Ministry later updated the toll to 14, though it was not immediately clear whether the additional deaths were also heat-related. More than 2,700 cases of heat stress and sunstroke among pilgrims were reported, Mohammed al-Abdulaali, a spokesman for the Saudi Health Ministry, said Monday, according to the Saudi Press Agency…This year's Hajj is being attended by 1.8 million people from around the world, local authorities have said. The pilgrimage began on Friday and is set to culminate Wednesday. Islam follows the lunar calendar, with 354 days, so the Hajj shifts about 10 or 11 days earlier each year on the Gregorian calendar. Increasing heat and humidity due to climate change in parts of Saudi Arabia where the Hajj takes place could make the pilgrimage dangerous for some, a study published in 2019 said. Researchers from the Massachusetts Institute of Technology and Loyola Marymount University in Los Angeles said the risks could be serious when the Hajj occurs during the hottest summer months – from 2047 to 2052 and from 2079 to 2086". Meanwhile, ***Le Monde* reported**, "at least 550 pilgrims died during the hajj, underscoring the grueling nature of the pilgrimage which again unfolded in scorching temperatures this year. At least 323 of those who died were Egyptians, most of them succumbing to heat-related illnesses, two Arab diplomats coordinating their countries' responses told Agence France-Presse (AFP). "All of them (the Egyptians) died because of heat" except for one who sustained fatal injuries during a minor crowd crush, one of the diplomats said, adding the total figure came from the hospital morgue

"Billions felt heat with climate change-fueled intensity that broke more than 1,000 temperature records around the globe. Hundreds fell in the United States, where tens of millions of people across the Midwest and Eastern Seaboard have been sweltering amid one of the worst early-season heat waves in memory. **It should be obvious that dangerous climate change is already upon us. People will die because of global warming on this very day**."

A protester stands next to a digital display of an unofficial heat reading during a heat wave in Death Valley National Park in Death Valley, California. Photo: Ronda Churchill/*AFP/Getty Images*.

in the Al-Muaisem neighbourhood of Mecca. At least 60 Jordanians also died, the diplomats said, up from an official tally of 41 given earlier on Tuesday by Amman. The new deaths bring the total reported so far by multiple countries to 577, according to an AFP tally. The diplomats said the total at the morgue in Al-Muaisem, one of the biggest in Mecca, was 550. The hajj is one of the five pillars of Islam and all Muslims with the means must complete it at least once. The pilgrimage is increasingly affected by climate change, according to a Saudi study published last month that said temperatures in the area where rituals are performed were rising 0.4°C each decade. Temperatures hit 51.8°C at the Grand Mosque in Mecca on Monday, the Saudi national meteorology centre said".

In later June, ***BBC* journalist Thomas Spender reported**, "At least 1,301 people died during Hajj, Saudi Arabia says, mostly unauthorised pilgrims who walked long distances in intense heat. This year's pilgrimage took place during a heatwave, with temperatures at times exceeding 50C (122F). More than three-quarters of those who died did not have official permits to be there and walked under direct sunlight without adequate shelter, the official Saudi news agency SPA said. Some of those who died were elderly or chronically ill, the agency added. Hajj is the annual pilgrimage made by Muslims to the holy city of Mecca. All Muslims who are financially and physically able must complete the pilgrimage at least once in their lifetime. About 1.8 million people took part this year, Saudi Arabia said. Health Minister Fahd Al-Jalajel said efforts had been made to raise awareness about the dangers of heat stress and how pilgrims could mitigate this. Health facilities treated nearly half a million pilgrims, including more than 140,000 who did not have a permit, he said, and some were still in hospital for heat exhaustion". Meanwhile, ***El Mundo* journalist Lara Villalón wrote**, "The pilgrimage to Mecca, known as Hajj, is an obligatory rite for all Muslims at least once in their lives and brings together millions of worshipers annually to the sacred sites of Saudi Arabia. The event changes its date every year because it follows the Islamic lunar calendar and on this occasion it was held from June 14 to 19, coinciding with an unprecedented heat wave. The ceremony began with temperatures of 48 degrees and reached a record ever recorded in Mecca of 51.8 degrees on Tuesday. In the nearby town of Mina, where other outdoor rituals are held, the weather station recorded 46 degrees. The traditional pilgrimage to Mecca is increasingly affected by climate change, with an average temperature increase of 0.4 degrees in the last decade, according to a recent study."

"At least 1,301 people died during Hajj. This year's pilgrimage took place during a heatwave, with temperatures at times exceeding 50C (122F). Hajj is the annual pilgrimage made by Muslims to the holy city of Mecca. All Muslims who are financially and physically able must complete the pilgrimage at least once in their lifetime."

Rescuers carry away a man affected by the heat as Muslim pilgrims participate in the Hajj pilgrimage in Mina, near Saudi Arabia's holy city of Mecca. Photo: Fadel Senna/*AFP/Getty Images*.

Also, several June 2024 media stories featured several ***scientific*** themes in news accounts. For example, ***Guardian* correspondent Jillian Ambrose reported**, "The world's consumption of fossil fuels climbed to a record high last year,

driving emissions to more than 40 gigatonnes of CO2 for the first time, according to a global energy report. Despite a record rise in the use of renewable energy in 2023, consumption of fossil fuels continued to increase too, an annual review of world energy by the Energy Institute found. Juliet Davenport, the president of the Energy Institute, said the report had revealed "another year of highs in our energy-hungry world" including a record high consumption of fossil fuels, which rose by 1.5% to 505 exajoules. The findings threaten to dash hopes held by climate scientists that 2023 would be recorded as the year in which annual emissions peaked before the global fossil fuel economy begins a terminal decline. The Energy Institute, the global professional body for the energy sector, found that while energy industry emissions may have reached a peak in advanced economies, developing economies are continuing to increase their reliance on coal, gas and oil. Overall, fossil fuels made up 81.5% of the world's primary energy last year, down only marginally from 82% the year before, according to the report, even as wind and solar farms generated record amounts of clean electricity. The report, authored by consultants at KPMG and Kearney, found that wind and solar power climbed by 13% last year to reach a new record of 4,748 terawatt hours in 2023. But that was not enough to match the world's growing consumption of primary energy, which rose 2% last year to a record high of 620 exajoules and led to more fossil fuel use. The review found that the world's appetite for gas remained steady in 2024 while consumption of coal climbed by 1.6% and oil demand rose by 2% to reach 100m barrels a day for the first time".

"The world's consumption of fossil fuels climbed to a record high last year, driving emissions to more than **40 gigatonnes of CO2** for the first time. Despite a record rise in the use of renewable energy in 2023, consumption of fossil fuels continued to increase too, an annual review of world energy by the Energy Institute found."

For the first time, India's coal-powered stations, such as the Ennore plant near Chennai, used more coal than Europe and North America combined last year. Photo: Idrees Mohammed/*EPA*.

Also in June, a **World Weather Attribution report** generated media attention. For example, ***Guardian* journalist Nina Lakhani wrote**, "The deadly heatwave that scorched large swaths of Mexico, Central America and the southern US in recent weeks was made 35 times more likely due to human-induced global heating, according to research by leading climate scientists from World Weather Attribution (WWA). Tens of millions of people have endured dangerous daytime and nighttime temperatures as a heat dome engulfed Mexico, and the large, lingering zone of high pressure stretched north to Texas, Arizona and Nevada and south over Belize, Honduras, Guatemala and El Salvador. A heatwave can be caused by several factors including a heat dome, which traps hot air close to the ground, blocking cool air from entering and causing temperatures to rise and stay high for days or weeks. In May and early June, the heat dome hovered over the region, breaking multiple daily and national records, and causing widespread misery and disruption, especially among the poorest and most marginalized communities. Such extreme heat spells are four times more likely today than they were at the turn of the millennium, when the planet was 0.5C cooler, the WWA analysis found".

Media portrayals in June 2024 also featured related and ongoing ***cultural***-themed stories

relating to climate change or global warming. To illustrate, covering protests and climate change ***Guardian* correspondent Kelsey Ables wrote**, "Protesters sprayed part of Stonehenge with orange paint Wednesday, calling on the British government to take action on climate change a day before thousands are expected to flock to the 5,000-year-old site in southern England to celebrate the summer solstice. A video shared Wednesday by Just Stop Oil, the environmental activist group responsible, shows two people running toward the monument and unleashing the orange paint. People nearby shout "No" and "Stop him," as others try to pull the protesters away. The group said in a statement that it is "demanding that our next government sign up to a legally binding treaty to phase out fossil fuels by 2030." It added that the paint was made of corn flour that will wash off with the rain…There have been a spate of protests involving historic objects and art in recent years, with activists splattering paint, soup and other substances on artworks such as the Mona Lisa and Van Gogh's "Sunflowers" to call attention to issues including the climate crisis – and prompting an international plea from museums for them to stop. This week's incident, however, seems like "a bit of an escalation," said Shannon Gibson, a professor at the University of Southern California who researches global environmental politics and social movements. While previous incidents in museums typically left only surface-level damage to the protective cover of an artwork or historic object, the protesters at Stonehenge placed paint directly on a renowned UNESCO World Heritage site. In a separate incident on Thursday, Just Stop Oil said two supporters broke into an airfield "where [Taylor] Swift's jet is currently stationed" and painted two private jets with orange paint. Stansted Airport, in response to a question about whether Swift's private jet was affected, said the artist "doesn't have a jet at the airport," but it would not confirm whether the artist had landed on another plane, citing privacy reasons. It referred to a statement from Essex police that said two were detained following reports of people gaining access to a private area of an airfield and damaging two aircraft while the airport and flights operated as normal. "We are not anti-protest but we will always take action where criminal acts take place," Chief Superintendent Simon Anslow said. "... I would like to reassure passengers and the wider public that we are well prepared and resourced to deal with incidents of this nature." Critics say such protests can alienate potential supporters of climate justice movements and create spectacle rather than effect change. But Gibson said protest is meant to be a spectacle – and that protests at sites like museums and historic monuments reach individuals who may be sheltered from the impacts of climate change".

"Protesters sprayed part of Stonehenge with orange paint Wednesday, calling on the British government to take action on climate change a day before thousands are expected to flock to the 5,000-year-old site in southern England to celebrate the summer solstice."

Climate protesters connected to Just Stop Oil were arrested on June 19 after spraying orange paint on the ancient Stonehenge monument in southern England. Credit: ***The Washington Post***.

In other stories, migration and the relocation of Latin American climate refugees made news. For example, ***El País* journalist Noor Mahtani reported**, "According to studies by the Ministry of the Environment of Panama, by 2050 none of the 365 Caribbean islands will be habitable due to the rapid rise in sea level due to global warming. For this reason, the Government has displaced some

Figure 3. Examples of newspaper front pages with climate change stories in June 2024.

300 coastal families of the Guna ethnic group this first week of June to Isber Yala, a neighborhood of 300 identical 40-square-meter houses".

In entertainment culture news intersecting with climate change, a new Coldplay album earned media attention in June. For example, ***Guardian* correspondent Ben Beaumont-Thomas reported**, "Coldplay are aiming to make the most ecologically sustainable vinyl record yet, for their newly announced album Moon Music. Each 140g vinyl copy of Moon Music, released 4 October, will be manufactured from nine plastic bottles recovered from consumer waste. For a special "notebook edition", 70% of the plastic has been intercepted by the environmental nonprofit The Ocean Cleanup from Rio Las Vacas, Guatemala, preventing it from entering the Gulf of Honduras and the Atlantic Ocean. The band say they will reduce carbon emissions compared with regular 140g vinyl production by 85%, and prevent the manufacture of 25 tonnes of virgin plastic. CD copies will be made from 90% recycled plastic, with a 78% reduction in emissions compared with traditional CD manufacture. The initiative comes alongside Coldplay's attempt to reduce the environmental impact of touring, as the band continue their epic Music of the Spheres world tour which is now the third-highest grossing tour of all time. Earlier this month the band said they had reduced their carbon footprint by 59% compared with their previous world tour. As well as trying to avoid plane travel where possible,

creative technological solutions were deployed, such as "kinetic dancefloors" that harnessed energy from the movement of the crowd".

This will hopefully be a more successful effort than their 2006 endeavor to 'offset' the production of their 2006 album *A Rush of Blood to the Head* by financing reforestation projects in India. It was later learned that only a fraction of the planted trees had survived to effectively remove CO_2 from the atmosphere.

Last, many ***political*** and ***economic***-themed media stories about climate change or global warming were evident in June 2024 coverage. For instance, as climate negotiations in the German city of Bonn drew to a close, UN climate chief Simon Stiell said that nations had "a very steep mountain to climb" ahead of the COP29 summit in Baku, Azerbaijan, in November. ***Hindustan Times* journalist Jayashree Nandi reported**, "observers said there has been no progress on talks to define a new collective quantified goal (NCQG) , which is expected to define the contours of discussion at the next UN climate conference, COP29, at Baku, Azerbaijan. The US has repeated its stance on how contributing to the new fund, meant to replace the existing goal of $100 billion per year, should be voluntary. The Arab group, Cuba and African nations have called for determining the quantum of the new goal. The agenda of COP29 this November is to negotiate a new financial goal to be set from the floor of $100 billion for the post-2025 period. This is expected to help developing countries transition to a low-carbon future…According to Loss and Damage Collaboration, a climate policy group that is tracking the negotiations, the US has argued that NCQG is separate from the provisions under the United Nations Framework Convention on Climate Change. This weakens the provision in the convention and the Paris Agreement that developed nations ought to deliver climate finance to developing countries, experts said. They also said developed countries are urging to expand the number of donors by including emerging economies and limiting beneficiaries to least developed countries".

As a final example from the month, United Nations Secretary General Antonio Guterres' comments about fossil fuel company advertising and climate change earned news attention in several outlets. For example, ***Guardian* journalist Oliver Milman reported**, "Fossil-fuel companies are the "godfathers of climate chaos" and should be banned in every country from advertising akin to restrictions on big tobacco, the secretary general of the United Nations has said while delivering dire new scientific warnings of global heating. In a major speech in New York on Wednesday, António Guterres called on news and tech media to stop enabling "planetary destruction" by taking fossil-fuel advertising money while warning the world faces "climate crunch time" in its faltering attempts to stem the crisis. "Many governments restrict or prohibit advertising for products that harm human health, like tobacco," he said. "I urge every country to ban advertising from fossil-fuel companies. And I urge news media and tech companies to stop taking fossil-fuel advertising"".

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JULY "We must make up for lost time"

Views of the Serra de A Capelada wind farm, in Cedeira, Spain, this July. Photo: ÓSCAR CORRAL/*El País*.

Media coverage of climate change or global warming in newspapers around the globe **dropped 4%** from June 2024. Coverage in July 2024 **diminished 26%** from July 2023 levels. International wire services stories in July 2024 went **up 13%** from the previous month.

July media coverage of climate change or global warming in newspapers around the globe dropped 4% from June 2024. Meanwhile, coverage in July 2024 diminished 26% from July 2023 levels. However, Figure 1 shows that international wire services stories in July 2024 went up 13% from the previous month.

At the regional level, levels of July 2024 coverage went up in Asia (+1%), North America (+11%), and the Middle East (+57%) compared to the previous month of June. Meanwhile, coverage decreased in Latin America (-4%), the European Union (EU) (-13%), Africa (-23%), and Oceania (-30%). Figure 2 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through July 2024.

Our Media and Climate Change Observatory (MeCCO) team continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for **open-source datasets and downloadable visuals**.

Moving to the content of news coverage about climate change in July 2024, many ***political*** and ***economic***-themed media stories about climate change or global warming were evident. For instance, there were several news accounts about developments in renewables, overtaking fossil fuels in electricity generation in Europe. For example, ***El País* journalist Manuel Planelles reported**, "The European electricity system is embarking on a transition to wean itself off fossil fuels, which the EU has to import to a large extent and which, in addition, are the main responsible for a climate crisis from which the continent cannot escape. During the first half of this year, another of the racing goals of this race was surpassed: solar and wind power generated more electricity

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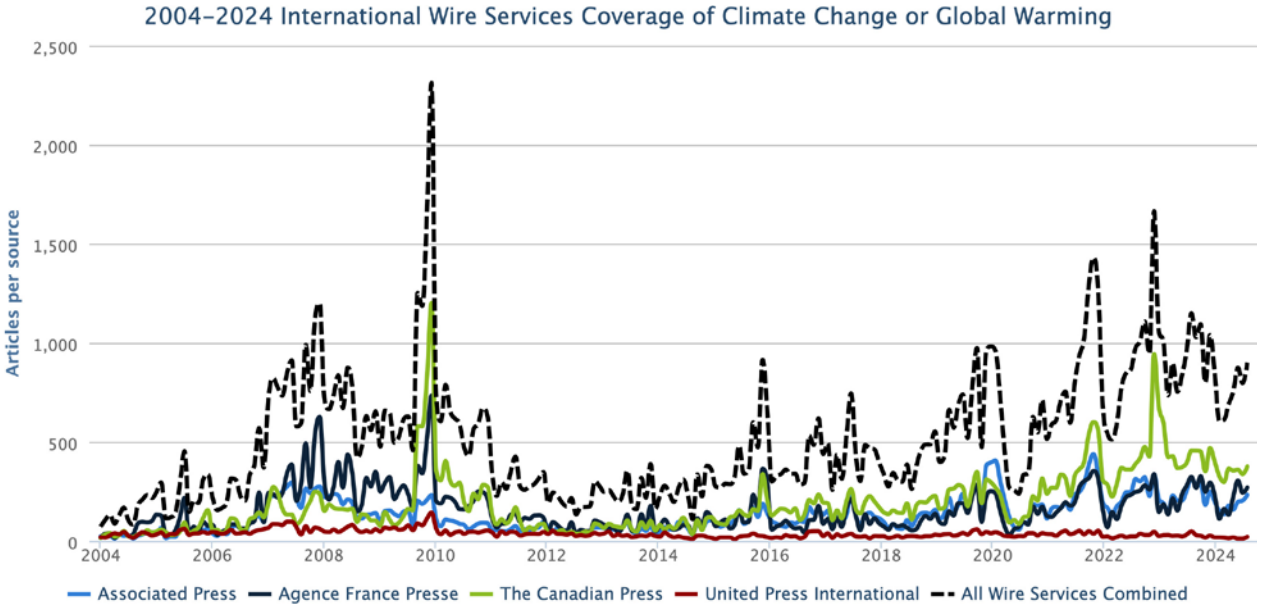

Figure 1. International wire services coverage – across *The Associated Press, Agence France Presse, The Canadian Press*, and *United Press International (UPI)* – of climate change or global warming from January 2000 through July 2024.

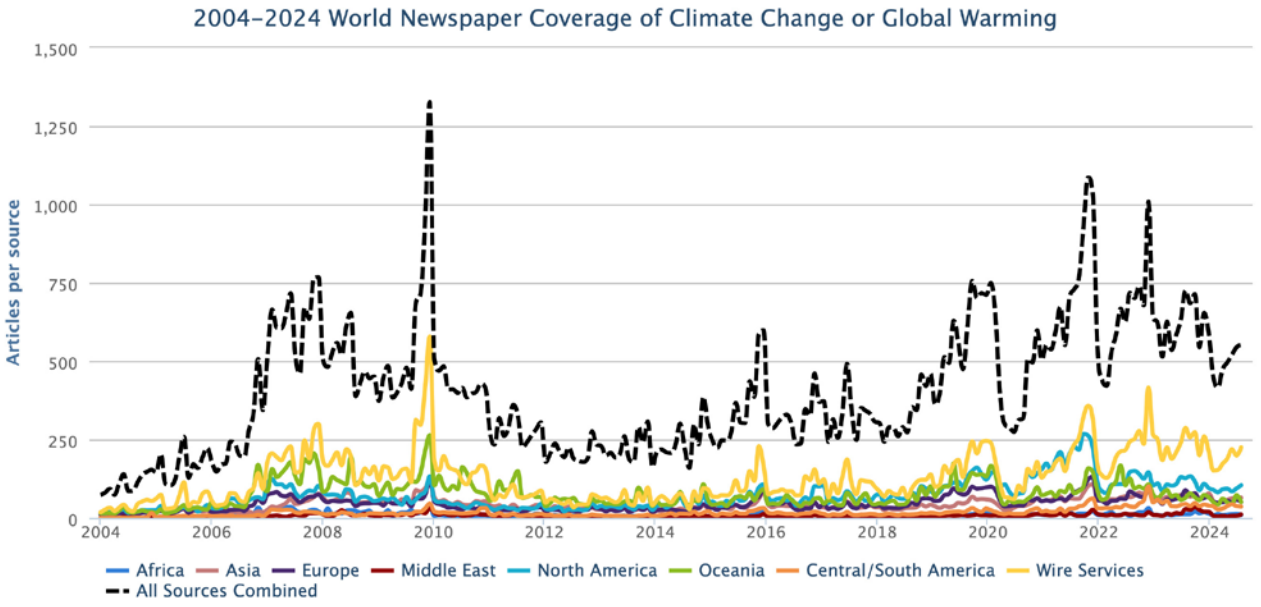

Figure 2. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through July 2024.

than all fossil fuels (mainly coal and natural gas) together. This is the first time this has happened, according to a report by the group of expert analysts in energy and climate Ember."

The shake up in the United States (US) presidential race – where Joe Biden announced he would not seek a second term in office while endorsing Vice President Kamala Harris – generated several news stories about Kamala Harris' climate policy stance. For example, ***New York Times* journalist Lisa Friedman reported**, "Vice President Kamala Harris has for years made the environment a top concern, from prosecuting polluters as California's attorney general to sponsoring the Green New Deal as a senator to casting the tiebreaking vote as vice president for the 2022 Inflation Reduction Act, the largest climate investment in United States history. As she runs for the White House, Ms. Harris is widely expected to try to protect the climate achievements of the Biden administration, a position that could resonate with voters during a summer of record heat. A

clear majority of Americans, 65 percent, wants the country to focus on increasing solar, wind and other renewable energy and not fossil fuels, according to a May survey by the Pew Research Center. Last year, Ms. Harris flew to the United Nations global climate summit in Dubai, United Arab Emirates, where she told world leaders that "the urgency of this moment is clear. The clock is no longer just ticking, it is banging. And we must make up for lost time." That was a subtle reference to former President Donald J. Trump, who made the United States the first and only country to withdraw from the global Paris Agreement to limit greenhouse gas emissions. (The United States subsequently rejoined under President Biden.) The Republican nominee in the current race for the White House, Mr. Trump has indicated that he would again pull back from the global fight against climate change if he is elected in November. "Around the world, there are those who seek to slow or stop our progress, leaders who deny climate science, delay climate action, and spread misinformation," Ms. Harris said at the summit. "In the face of their resistance and in the context of this moment, we must do more"".

> "Hurricane Beryl is tearing across the Caribbean this week, unleashing life-threatening flooding and dangerous wind as it heads toward Mexico's Yucatan Peninsula. Beryl has already racked up multiple alarming superlatives. It is the most powerful hurricane ever recorded this early in the Atlantic hurricane season, and also the earliest storm to strengthen so rapidly as it formed."

A woman looks at a beach littered with trash at Bull Bay, Jamaica, in the aftermath of Hurricane Beryl. Photo: Ricardo Makyn/*AFP/Getty Images*.

In July, there were also several ongoing media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. To begin, news stories linking hurricane Beryl – a late June and early July storm that crossed the Caribbean – with climate change or global warming were apparent. For example, ***BBC journalist Mark Poynting reported***, "Hurricane Beryl has wreaked havoc in parts of the Caribbean – and put the role of climate change under the spotlight. With maximum sustained wind speeds of more than 160mph (257km/h), it became the earliest category five Atlantic hurricane in records going back around 100 years. In fact, there has only been one previous recorded case of a category five Atlantic hurricane in July – Hurricane Emily, on 16 July 2005. The causes of individual storms are complex, making it difficult to fully attribute specific cases to climate change. But exceptionally high sea surface temperatures are seen as a key reason why Hurricane Beryl has been so powerful. Usually, such strong storms only develop later in the season, after the seas have heated up through the summer. Hurricanes generally need the sea surface to be at least 27C in order to have a chance of developing. As the map below shows, waters along Hurricane Beryl's path have been much warmer than this. Map of sea temperatures along Hurricane Beryl's path across the Atlantic. Beryl has moved across exceptionally warm waters, marked by reds, generally at least 27C or 28C.

All else being equal, warmer seas mean more powerful hurricanes, because the storms can pick up more energy, enabling higher wind speeds". Meanwhile, US ***National Public Radio***

reporters Michael Copley and Rebecca Hersher noted, "Hurricane Beryl is tearing across the Caribbean this week, unleashing life-threatening flooding and dangerous wind as it heads toward Mexico's Yucatan Peninsula. Beryl has already racked up multiple alarming superlatives. It is the most powerful hurricane ever recorded this early in the Atlantic hurricane season, and also the earliest storm to strengthen so rapidly as it formed. Beryl grew from a relatively weak tropical depression into a full-blown major hurricane in less than two days, sending residents in its path scrambling to evacuate or find suitable shelter. Climate change is playing a crucial and obvious role in Beryl's development, scientists say. "You're hearing things like 'unprecedented' and 'shocking' a lot about Beryl," says Andra Garner, a hurricane expert at Rowan University in New Jersey. But Garner says it isn't surprising to scientists to see such a big storm so early this year. Ocean temperatures have been at record highs, largely due to human-caused climate change driven by burning fossil fuels. And warm water is fuel for hurricanes".

In July, heat waves – with links made to climate change or global warming – were abundant in many news accounts. For example, ***Washington Post*** journalist Anna Phillips reported, "A searing heat wave that has gripped much of the United States in recent days is suspected of killing at least 28 people in the last week, according to reports from state officials, medical examiners and news outlets. The number, which is based on preliminary reports from California, Oregon and Arizona, is likely to grow as authorities assess the death toll of a heat wave that began last week, delivering record-breaking temperatures throughout the West and scorching East Coast cities. As of Wednesday, more than 135 million people across the Lower 48 were under heat alerts, many of which are expected to continue until the weekend. Most of the deaths have been reported in California, where the heat broke daily records late last week in a handful of major cities, including San Jose, Fresno and Oakland.

"A searing heat wave that has gripped much of the United States in recent days is suspected of killing at least 28 people in the last week. The number, which is based on preliminary reports from California, Oregon and Arizona, is likely to grow as authorities assess the death toll of a heat wave that began last week, delivering record-breaking temperatures throughout the West and scorching East Coast cities."

People use a misting tent outside of Blanchet House in downtown Portland, Oregon, as a heat wave continues in July. Photo: Dave Killen/*The Oregonian/AFP*.

In Santa Clara County, which includes San Jose, Chief Medical Examiner Michelle Jorden said her office is investigating 14 cases where people appear to have died from heat-related causes".

In mid-July, a heatwave in Japan earned news attention. For example, ***Japan Times*** journalists Francis Tang and Tomoko Otake reported, "The number of patients rushed to hospitals for heatstroke over the week through Sunday quadrupled from the week before as the mercury hit 40 degrees Celsius in some cities amid a sweltering heat wave, preliminary data from the Fire and Disaster Management Agency showed Tuesday. Over that period, 9,105 people sought emergency hospital care for suspected heatstroke across the nation, more than twice

the number during the same period last year". Meanwhile, ***Guardian* correspondent Justin McCurry wrote**, "Japan's meteorological agency has issued a heatstroke alert for 26 of the country's 47 prefectures, urging people not to go outside unless absolutely necessary, to use their air conditioners during the day and at night, and to drink plenty of water. Authorities in Japan issued the extreme heat warnings after the temperature reached 40C for the first time this year on Sunday, as the country swelters in the grip of another heatwave. Shizuoka in central Japan reported a temperature of 40C in the early afternoon on Sunday, while 244 other locations saw the mercury rise to 35C or over – a level officially recognised as 'extremely hot'".

Media portrayals in July 2024 also featured related and ongoing ***cultural***-themed stories relating to climate change or global warming. To illustrate, landslides in India – with attribution to climate change or global warming – devastated communities in the southern Indian state of Kerala. For example, ***Hindustan Times* reported**, "Scientists have said the devastating Wayanad landslides in Kerala could be the result of a combination of climate change, excessive mining and loss of forest cover in the region…heavy rain set off a series of landslides in Kerala's Wayanad district, leaving more than 120 people dead and 128 injured. Many are still feared to be trapped under debris. The Met Office said more heavy rainfall could occur in some places in the state over the next two days. According to the landslide atlas released by the Indian Space Research Organisation's (ISRO) National Remote Sensing Centre in 2023, 10 out of the 30 most landslide-prone districts in India were located in Kerala, with Wayanad ranked 13th. Scientists have identified a mix of causes for the landslides - namely loss of forests, climate change and excessive mining".

"Scientists have said the devastating Wayanad landslides in Kerala could be the result of a combination of climate change, excessive mining and loss of forest cover in the region…heavy rain set off a series of landslides in Kerala's Wayanad district, leaving more than 120 people dead and 128 injured. Many are still feared to be trapped under debris."

Rescue teams crossing a temporary bridge to reach to a landslide site after multiple landslides in the hills in Wayanad district, in the southern state of Kerala, India. Photo: Francis Mascarenhas/*Reuters*.

Also, several July 2024 media stories featured several ***scientific*** themes in news accounts. In early July, reports that June 2024 became the 13th straight month with heat records earned news attention. For example, ***Associated Press* journalist Seth Borenstein wrote**, "Earth's more than year-long streak of record-shattering hot months kept on simmering through June, according to the European climate service Copernicus. There's hope that the planet will soon see an end to the record-setting part of the heat streak, but not the climate chaos that has come with it, scientists said. The global temperature in June was record warm for the

Figure 2. Examples of newspaper front pages with climate change stories in July 2024.

13th straight month and it marked the 12th straight month that the world was 1.5 degrees Celsius (2.7 degrees Fahrenheit) warmer than pre-industrial times, Copernicus said in an early Monday announcement". Meanwhile, ***La Vanguardia*** **journalist Celeste López noted**, "June 2024 was the warmest June on record globally, with an average surface air temperature of 16.66°C according to ERA5 data, which is 0.67°C above the 1991–2020 average for that month and 0.14°C above the temperature in June 2023, which previously held the record for the sixth month of the year. This is the 13th consecutive month with the highest temperature recorded in the ERA5 record for the respective month. Although this is quite unusual, a similar run of monthly global temperature records occurred in 2015–2016."

Moreover, there were several stories about how heatwaves in Europe are up to 3°C warmer than before. For example, ***La Vanguardia*** **journalists Antonio Cerrillo y Sergio Aires wrote**, "Recent heatwaves across Europe have been up to 3°C warmer than previously observed, according to a study by researchers at the ClimaMeter consortium, which attributes this to climate change. The study used satellite data collected over the past 40 years. The new analysis comes after weeks of scorching temperatures across much of Europe. The impacts of the extreme heat were particularly felt in the southern and eastern parts of the continent, where there was a spate of hospitalizations and wildfires and increased energy consumption."

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AUGUST "Loud and Clear"

United Nations Secretary-General Antonio Guterres speaks at the opening of the annual Pacific Islands Forum leaders meeting in Nuku'alofa, Tonga on August 26, 2024. Photo: Charlotte Graham-McLay/*AP*.

Media coverage of climate change or global warming in newspapers around the globe **dropped 12%** from July 2024. Coverage in August 2024 **diminished 30%** from August 2023 levels.

August media coverage of climate change or global warming in newspapers around the globe dropped 12% from July 2024. Meanwhile, coverage in August 2024 diminished 30% from August 2023 levels. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through August 2024.

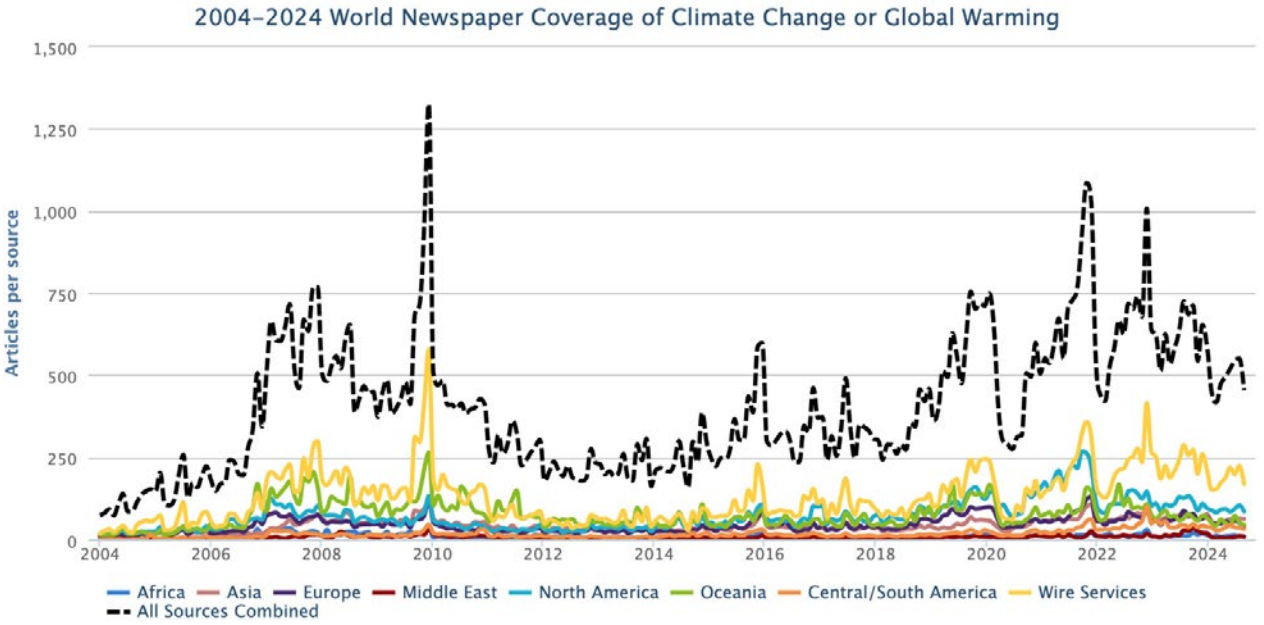

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through August 2024.

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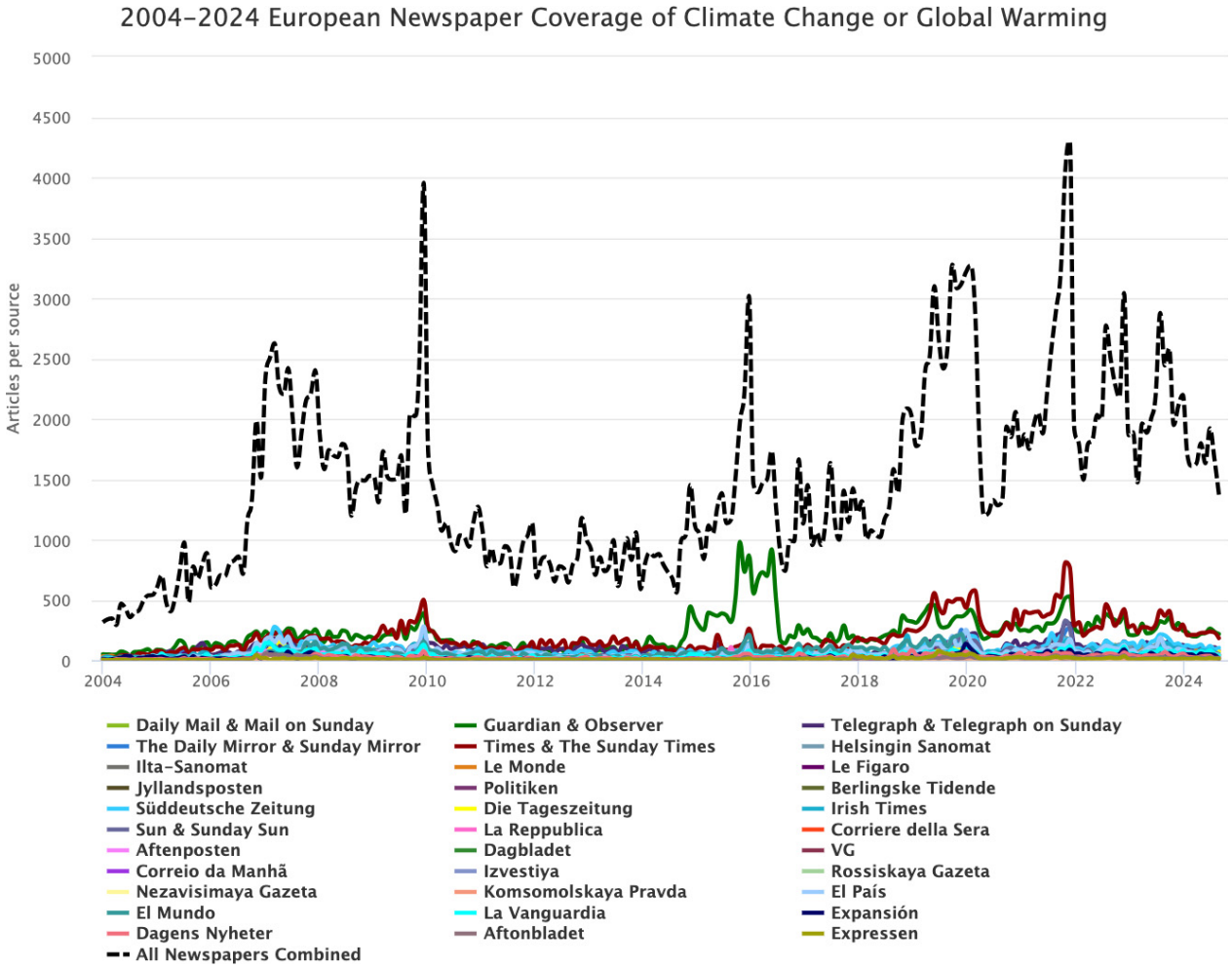

Figure 2. European Union (EU) coverage of climate change or global warming from January 2000 through August 2024.

At the regional level, levels of August 2024 coverage went up in Africa (+15%) compared to the previous month of July. Meanwhile, coverage decreased in Asia (-1%), Oceania (-10%), Latin America (-11%), North America (-18%), the European Union (EU) (-18%) (Figure 2), and the Middle East (-25%).

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Moving to the content of news coverage about climate change in August 2024, In August, there were many media stories relating to ***ecological*** and ***meteorological*** dimensions of climate change or global warming. To begin, as July gave way to August, heavy rainfall events in South Asia – with links to a changing climate – earned news attention. For example, ***New York Times* journalist Austyn Gaffney reported**, "A sudden burst of rainfall on July 30 caused a cascade of landslides that buried hundreds of people in the mountainous Kerala region of southern India. That downpour was 10 percent heavier because of human-caused climate change, according to a study by World Weather Attribution, a group of scientists who quantify how climate change can influence extreme weather. Nearly six inches, or 150 millimeters, of rain fell on soils already highly saturated from two months of monsoon and marked the third highest single-day rain event on record for India. "The devastation in northern Kerala is concerning not only because of the difficult humanitarian situation faced by thousands today, but also because this disaster occurred in a continually warming world," said Maja Vahlberg, a climate risk consultant at the

Red Cross Red Crescent Climate Centre. "The increase in climate-change-driven rainfall found in this study is likely to increase the number of landslides that could be triggered in the future." In a state that is highly prone to landslides, the Wayanad district is considered the riskiest part. As of Tuesday, at least 231 people had died and 100 remained missing".

Elsewhere, heat waves in Northern Europe earned media coverage in August. In Finland, there were 63 heat days during the summer of 2024, which tied the record (a heat day is defined in Finland as a day when the temperature exceeds 25 degrees Celsius (77°F)). As an example of news coverage generated from heat in Europe, journalist **Liisa Niemi from the Finnish Newspaper *Helsingin Sanomat* reported** that, "Finland may have to get used to experiencing summer temperatures and even heat waves later into autumn. The end of this August has been warmer than usual. At the observation station in Salo [on the coast of Southern Finland], a temperature of 27 degrees (81°F) was measured on Friday afternoon." Despite the worried tone of the news story, it was headlined with a rather carefree tone: "Finnish summers are getting longer, says Finnish Meteorological Institute researcher".

Connecting issues of housing, flooding and wildfire risk, ***Washington Post* journalist Sarah Kaplan reported**, "As he looked at the Atlantic Ocean through the condo unit's bedroom window, the sparkling blue water almost close enough to touch, Ed Morman knew this was where he wanted to spend the rest of his life. The 51-year-old was aware it might be risky moving to a barrier island on Florida's Atlantic Coast, where relative sea levels have risen more than half a foot since 2010, according to a Washington Post analysis of tide gauge data. But the condo in Satellite Beach had everything else Morman and his wife were looking for: Warm weather. A welcoming community. A price they could afford in a place where they could one day retire. He turned to the real estate agent and said, "Yeah, we're making an offer." Morman and his wife moved from their Washington apartment to the Satellite Beach condo in February 2023. They are among more than 300,000 Americans who moved to flood- or fire-prone counties last year, despite the growing threat posed by climate change, according to a report from the real estate company Redfin. Drawing on data from the Census Bureau and the First Street

> "A sudden burst of rainfall on July 30 caused a cascade of landslides that buried hundreds of people in the mountainous Kerala region of southern India. That downpour was 10 percent heavier because of human-caused climate change, according to a study by World Weather Attribution. Nearly six inches, or 150 millimeters, of rain fell on soils already highly saturated from two months of monsoon and marked the third highest single-day rain event on record for India."

Rescuers searching through mud and debris after landslides in Wayanad district in Kerala, India, on August 1. Photo: Rafiq Maqbool/*AP*.

Foundation, a nonprofit that assesses climate risk, the Redfin analysis showed that the counties most exposed to floods and fires gained more population than they lost between July 2022 and July 2023 – a continuation of a years-long trend of Americans disproportionately relocating to climate-vulnerable areas. But the report, provided exclusively to *The Post*, also revealed hints that migration patterns might be shifting. In fire-prone California, the highest-risk counties had a net outflow of nearly 7,000 people. And the net inflow to the nation's high-flood-risk counties fell dramatically – a net population increase of just 16,144 last year after gaining 383,656 people between 2021 and 2022. Coming amid a summer of record heat, raging wildfires and a hurricane season that is projected to be among the worst in decades, the results suggest that climate change may be starting to hit home for Americans in a new way…"

In late August, flooding in Asia – with links to a changing climate – generated news coverage. For example, ***Associated Press* journalist Munir Ahmed wrote**, "Flash floods triggered by monsoon rains swept through streets in southern Pakistan and blocked a key highway in the north, officials said Monday, as the death toll from rain-related incidents rose to 209 since July 1. Fourteen people died across Punjab province in the past 24 hours, said Irfan Ali, an official at the provincial disaster management authority. Most of the other deaths have occurred in Khyber Pakhtunkhwa and Sindh provinces. Pakistan's annual monsoon season runs from July through September. Scientists and weather forecasters have blamed climate change for heavier rains in recent years. In 2022, climate-induced downpours inundated one-third of the country, killing 1,739 people and causing $30 billion in damage".

"Flash floods triggered by monsoon rains swept through streets in southern Pakistan and blocked a key highway in the north, as the death toll from rain-related incidents rose to 209 since July 1. Scientists and weather forecasters have blamed climate change for heavier rains in recent years. In 2022, climate-induced downpours inundated one-third of the country, killing 1,739 people and causing $30 billion in damage."

Villagers wade through flood areas caused by heavy monsoon rains near Sohbat Pur, an area of Pakistan's southwestern Baluchistan province. Photo: *AP*.

Many ***political*** and ***economic***-themed media stories about climate change or global warming also made news in August. For instance, in mid-August former US President Donald Trump and Elon Musk had a two-hour live conversation on Twitter/X with ranging across topics including climate change. This generated news attention. For example, ***BBC News* reporters Jake Horton, Mark Poynting and Lucy Gilder noted**, "In a two-hour discussion with Elon Musk, on the billionaire's platform X, Donald Trump made a number of questionable and false claims - which went largely unchallenged. The Republican presidential candidate returned to some familiar campaign themes, such as illegal immigration and rising prices, but he also talked about climate change. *BBC Verify* has been checking some of his claims. 'How fast are sea levels set to rise?' CLAIM: "The biggest threat is not global warming, where the ocean is going

to rise one eighth of an inch over the next 400 years." VERDICT: According to climate projections, Trump is vastly underestimating the rise in sea levels. In the decade 2014-2023, global average sea levels rose by an average of nearly 4.8mm per year (0.19in), according to the World Meteorological Organization. That increase is already greater than the one eighth of an inch (0.13in) that Mr Trump predicts will happen over the next 400 years. The magnitude of future rises is difficult to predict, because it is uncertain how quickly ice-sheets will melt, and future warming will depend on greenhouse gas emissions from human activities. The UN's Intergovernmental Panel on Climate Change (IPCC) has estimated a likely range of 0.28 to 1.01m of global sea-level rise by 2100 - although higher rises can't be ruled out. A sea-level rise of one metre would put hundreds of millions of people at risk of more regular coastal flooding, as well as submerging parts of low-lying countries such as the Maldives".

'How fast are sea levels set to rise?'

Claim: "The biggest threat is not global warming, where the ocean is going to rise one eighth of an inch over the next 400 years."

Verdict: "According to climate projections, Trump is vastly underestimating the rise in sea levels. In the decade 2014-2023, global average sea levels rose by an average of nearly 4.8mm per year (0.19in), according to the World Meteorological Organization. That increase is already greater than the one eighth of an inch (0.13in) that Mr Trump predicts will happen over the next 400 years."

In mid-August former US President Donald Trump and Elon Musk had a two-hour live conversation on Twitter/X with ranging across topics including climate change. Credit: *BBC News*.

At the US Democratic National Convention in August, Kamala Harris' and Tim Walz' climate policy track records as well as rhetoric about climate change at the convention earned media coverage. For example, ***CBS News* correspondent Mary Cunningham reported**, "The Democratic Party devoted seven pages of its 90-page 2024 platform to climate policy, offering a few clues about what Vice President Kamala Harris could do to combat climate change if she wins the presidency. Harris, who only emerged as her party's nominee in mid-July after President Biden dropped out of the race, has not yet articulated her own climate policy. The topic was scarcely mentioned at the Democratic convention this week, making the party platform the only guide to what climate policy in a Harris White House might be. During her nearly 40-minute long address at the Democratic National Convention on Thursday night, she talked about the economy, the war in Gaza, and immigration, but made just one brief reference to the issue in outlining the "fundamental freedoms" at stake in this election – "the freedom to breathe clean air, drink clean water, and live free from the pollution that fuels the climate crisis." Stevie O'Hanlon, a spokesperson for The Sunrise Movement, a youth-led climate group, said

that Harris' decision not to speak more forcefully on climate change – both at the DNC and leading up to it – was a "missed opportunity"".

In the international political arena, United Nations (UN) Secretary-General Antonio Guterres' comments at a meeting of Pacific Island nations earned notable media attention. For example, ***Associated Press*** **journalists Seth Borenstein and Charlotte Graham-Mclay noted**, "Highlighting seas that are rising at an accelerating rate, especially in the far more vulnerable Pacific island nations, UN Secretary-General Antonio Guterres issued yet another climate SOS to the world. This time he said those initials stand for "save our seas." The United Nations and the World Meteorological Organization Monday issued reports on worsening sea level rise, turbocharged by a warming Earth and melting ice sheets and glaciers. They highlight how the Southwestern Pacific is not only hurt by the rising oceans, but by other climate change effects of ocean acidification and marine heat waves. Guterres toured Samoa and Tonga and made his climate plea from Tonga's capital on Tuesday at a meeting of the Pacific Islands Forum, whose member countries are among those most imperiled by climate change. Next month the United Nations General Assembly holds a special session to discuss rising seas. U.N. Secretary-General Antonio Guterres issued yet another climate SOS to the world, highlighting seas that are rising at an accelerating rate, especially in the far more vulnerable Pacific island nations. "This is a crazy situation," Guterres said. "Rising seas are a crisis entirely of humanity's making. A crisis that will soon swell to an almost unimaginable scale, with no lifeboat to take us back to safety." "A worldwide catastrophe is putting this Pacific paradise in peril," he said. "The ocean is overflowing." A report that Guterres' office commissioned found that sea level lapping against Tonga's capital Nuku'alofa had risen 21 centimeters (8.3 inches) between 1990 and 2020, twice the global average of 10 centimeters (3.9 inches). Apia, Samoa, has seen 31 centimeters (1 foot) of rising seas, while Suva-B, Fiji has had 29 centimeters (11.4 inches). "This puts Pacific Island nations in grave danger," Guterres said.

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A section of land between trees is washed away due to rising seas in Majuro Atoll, Marshall Islands. Photo: Rob Griffith/*AP*.

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About 90% of the region's people live within 5 kilometers (3 miles) of the rising oceans, he said. Since 1980, coastal flooding in Guam has jumped from twice a year to 22 times a year. It's gone from five times a year to 43 times a year in the Cook Islands. In Pago Pago, American Samoa, coastal flooding went from zero to 102 times a year, according to the WMO State of the Climate in the South-West Pacific 2023 report… Guterres is amping up his rhetoric on what he calls "climate chaos" and urged richer nations to step up efforts to reduce carbon emissions, end fossil fuel use and help poorer nations. Yet countries' energy plans show them producing double the amount of fossil fuels in 2030 than the amount that would limit warming to internationally agreed upon levels, a 2023 UN report found. Guterres said he expects Pacific island nations to "speak loud and clear" in the next General Assembly, and because they contribute so little to climate change, "they have a moral authority to ask those that are creating accelerating the sea level rise to reverse these trends"".

"In Western Finland, Lumi Nolan sits with her signs every Friday in front of the town hall of a small town. She expresses her opinion alone for the sake of the climate. 'Grandparents for Climate' association have arrived on site. With them they have a blanket that reads: "Grandparents demand climate action. Other participants included a 64-year-old representative of 'Knitting Rebellion', a group of environmental activists knitting red scarves."

A couple of dozen people gathered at Tamme, Finland. Photo: Ville-Veikko Kaakinen /*HS*.

Media portrayals in August 2024 also featured related and ongoing ***cultural***-themed stories relating to climate change or global warming. To illustrate, challenges and opportunities of civic engagement were highlighted in August articles published by the Finnish newspaper *Helsingin Sanomat*. First, journalist **Inka Salmi reported** about a young climate activist who persistently tries to appeal decision-makers, writing, "In Western Finland, a 13-year-old girl sits with her signs every Friday in front of the town hall of a small town. She expresses her opinion alone for the sake of the climate. Lumi Nolan hopes that one day others will join her." Second, ***Helsingin Sanomat* journalist Milja Virtanen noted**, "'Grandparents for Climate' association have arrived on site. With them they have a blanket that reads: "Grandparents demand climate action." They've brought coffee, hot chocolate, cinnamon buns and toffee candies for the people." Other participants included a 64-year-old representative of "Knitting Rebellion", group of environmental activists knitting red scarves. She commented that "We adults are responsible for this, not the children. It fills me with sadness and a little frustration that adults don't support children more." She further explains that: "The plan is to take the scarves to Brussels. There, they will be used to demand action from politicians, adhering to the Paris Climate Agreement".

Elsewhere, climate social movement activities in South Korea garnered media interest. For example, ***Guardian* journalist Raphael Rashid reported**, "South Korea's constitutional court has ruled that part of the country's climate law does not conform with protecting the constitutional

Figure 3. Examples of newspaper front pages with climate change stories in August 2024.

rights of future generations, an outcome local activists are calling a "landmark decision". The unanimous verdict concludes four years of legal battles and sets a significant precedent for future climate-related legal actions in the region. The court found that the absence of legally binding targets for greenhouse gas reductions for the period from 2031-49 violated the constitutional rights of future generations and failed to uphold the government's duty to protect those rights. The court said this lack of long-term targets shifted an excessive burden to the future. It gave the national assembly and government until 28 February 2026 to amend the law to include these longer-term targets. The decision echoes a similar ruling by Germany's federal constitutional court in 2021, which found the country's climate law lacked sufficient provisions for emission reductions beyond 2030, potentially infringing on the freedoms of future generations. South Korea's climate litigation began in March 2020 when Youth 4 Climate Action, a group leading the Korean arm of the global school climate strike movement, filed the first lawsuit, alleging that the government's inadequate greenhouse gas reduction targets violated citizens' fundamental rights, particularly those of future generations. Subsequently, three additional lawsuits were consolidated, bringing the number of plaintiffs to 255. These plaintiffs represented a wide age range, including children, babies, and even a foetus at the time of filing, emphasising the long-term impact of climate policy on future generations. Activists including Kim Seo-gyeong from Youth 4 Climate Action said they saw the court's decision not as the end but as the beginning of a renewed push for more ambitious climate action".

Last, several August 2024 media stories featured several ***scientific*** themes in news

accounts. In particular, **new research in the journal *Nature*** about rising ocean temperatures around Australia's Great Barrier reef earned news coverage. For example, ***Associated Press* journalist Suman Naishadham reported**, "Ocean temperatures in the Great Barrier Reef hit their highest level in 400 years over the past decade, according to researchers who warned that the reef likely won't survive if planetary warming isn't stopped. During that time, between 2016 and 2024, the Great Barrier Reef, the world's largest coral reef ecosystem and one of the most biodiverse, suffered mass coral bleaching events. That's when water temperatures get too hot and coral expel the algae that provide them with color and food, and sometimes die. Earlier this year, aerial surveys of over 300 reefs in the system off Australia's northeast coast found bleaching in shallow water areas spanning two-thirds of the reef, according to Great Barrier Reef Marine Park Authority. Researchers from Melbourne University and other universities in Australia, in a paper published Wednesday in the journal Nature, were able to compare recent ocean temperatures to historical ones by using coral skeleton samples from the Coral Sea to reconstruct sea surface temperature data from 1618 to 1995. They coupled that with sea surface temperature data from 1900 to 2024. They observed largely stable temperatures before 1900, and steady warming from January to March from 1960 to 2024. And during five years of coral bleaching in the past decade – during 2016, 2017, 2020, 2022 and 2024 – temperatures in January and March were significantly higher than anything dating back to 1618, researchers found. They used climate models to attribute the warming rate after 1900 to human-caused climate change. The only other year nearly as warm as the mass bleaching years of the past decade was 2004".

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SEPTEMBER "The world is heating up quickly"

Firefighters on the flooded streets of Lewin Brzeski, Poland, on September. Photo: Omar Marques/*Getty Images*.

Media coverage of climate change or global warming in newspapers around the globe **increased 11%** from August 2024. Coverage has continued a **downward trend** from level the year before, **dropping 28%** from September 2023.

September media coverage of climate change or global warming in newspapers around the globe increased 11% from August 2024. However, coverage in September 2024 has continued a downward trend from level the year before, dropping 28% from September 2023. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through September 2024.

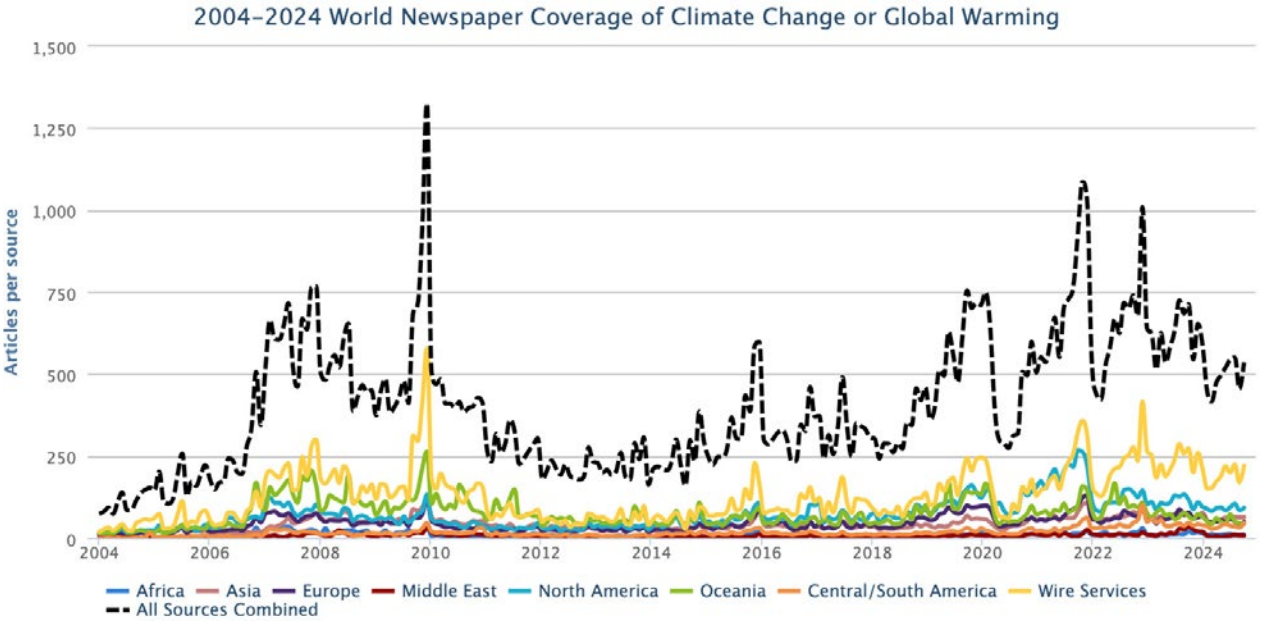

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through September 2024.

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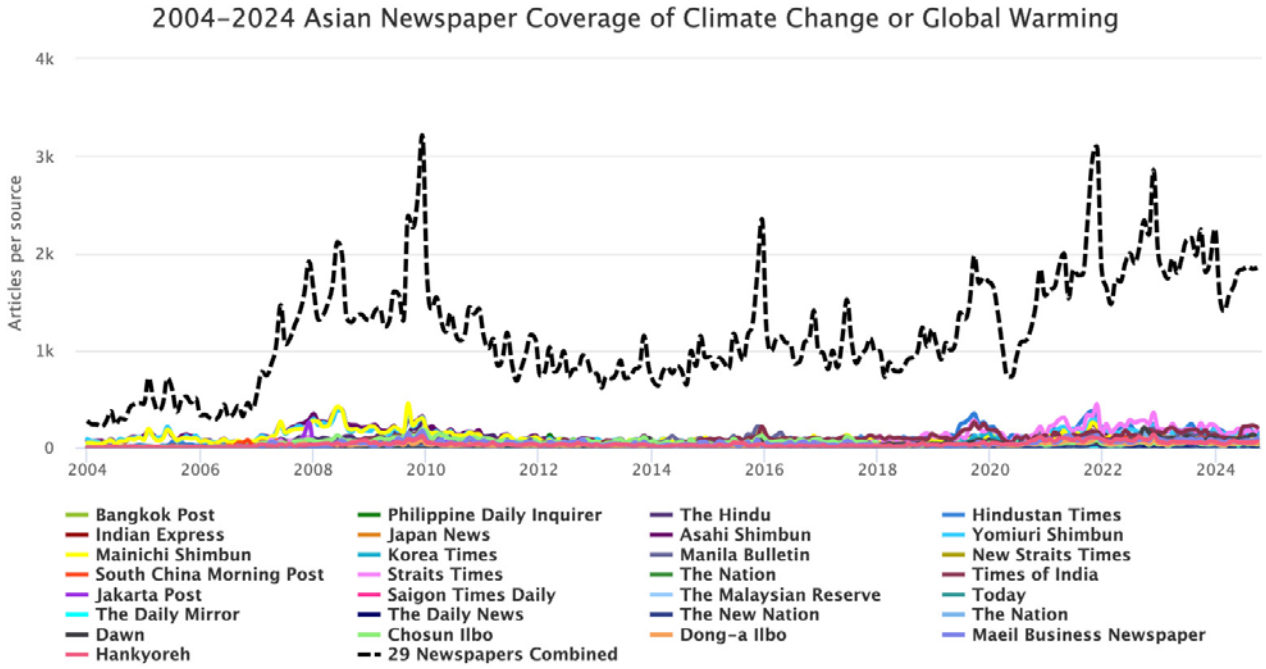


Figure 2. Coverage of climate change or global warming in Asia from January 2004 through September 2024.

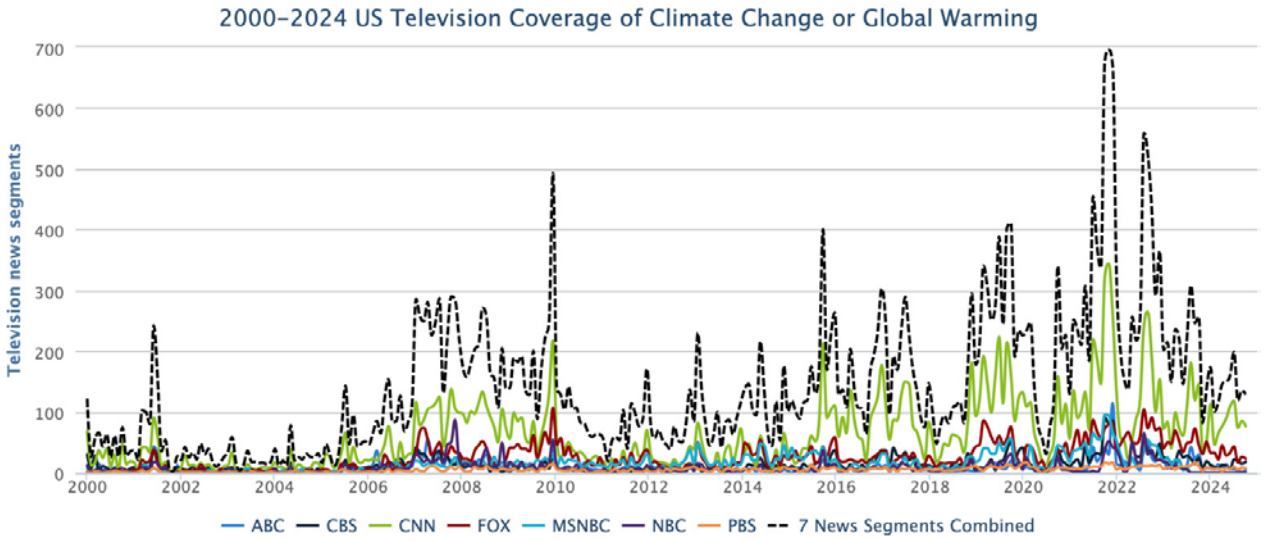


Figure 3. Television coverage of climate change or global warming in the US from January 2000 through September 2024.

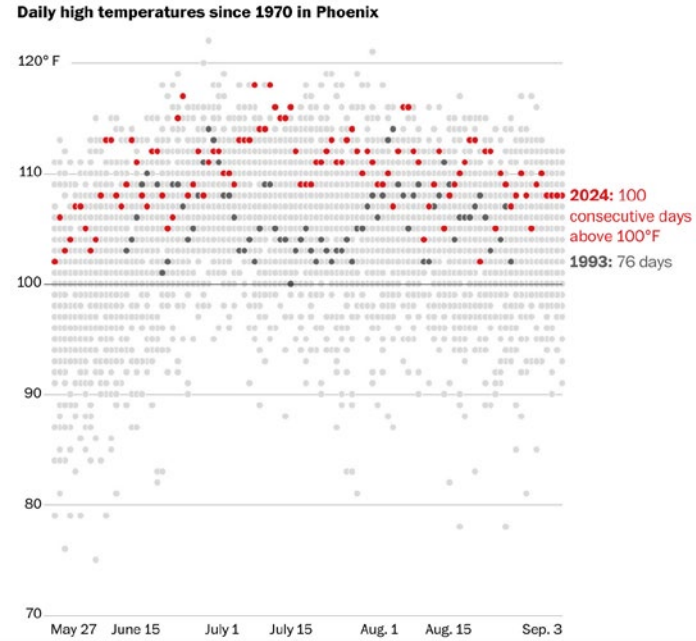
At the regional level, levels of September 2024 coverage went up in Africa (+8%), North America (+8%), the European Union (EU) (+21%), and Latin America (+42%) compared to the previous month of August. Meanwhile, coverage decreased in the Middle East (-2%), Oceania (-3%), and Asia (-8%) (Figure 2).

Among our country-level monitoring, for example United States (US) print coverage increased 9% while US television coverage (Figure 3) dipped 4% in September 2024 compared to the previous month of August. However, levels dropped considerably from levels of coverage in September 2023, where print coverage dropped 17% and television coverage was just half of that a year earlier (-50%).

Our Media and Climate Change Observatory (MeCCO) team continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for **open-source datasets and downloadable visuals**.

In terms of the content of news coverage about climate change in September 2024, ***ecological*** and ***meteorological*** dimensions drove a considerable amount of news attention to climate change or global warming stories. To begin, record-breaking heat events around the world generated coverage. For example, ***Washington Post* correspondents Ian Livingston, Erin Patrick O'Connor and Naema Ahmed reported**, "Summers in Phoenix are notoriously hot. But after two punishing summers of record-breaking heat, the latest milestone, set Tuesday, may be the most ominous yet. At 11 a.m. local time, temperatures in Phoenix hit 100 degrees for the 100th day in a row. The longest previous 100-degree streak was 76 days in 1993. In other words, this year has seen an uninterrupted stretch of 100-degrees days at least 3½ weeks longer than in any other year since records began in 1896. The relentless heat is testing the will of Phoenix residents. While accustomed to hot summers, many have never endured anything like this. And the heat has proved dangerous for vulnerable groups such as outdoor workers and unhoused populations". Meanwhile, ***Guardian* journalist Graham Readfearn wrote**, "Australia recorded its hottest August on record, with the national temperature 3C above average, as September kicked off with total fire bans in parts of New South Wales on Monday. Bureau of Meteorology data showed average temperatures across the nation in August were 3.03C above the long-term average, easily beating the previous 2.56C record set in 2009. The 2024 winter also ranked as the second hottest on record going back to 1910, the data showed, coming in at 1.48C above average. The hottest winter on record was 2023 at 1.54C above average. Climate scientists have described the extreme temperatures across Australia since the middle of August as "gobsmacking". While high-pressure systems over the continent kept skies clear and pushed temperatures higher, climate scientists said the extreme nature of the heatwave was likely caused by global heating".

> "Summers in Phoenix are notoriously hot. But after two punishing summers of record-breaking heat, the latest milestone, set Tuesday, may be the most ominous yet. At 11 a.m. local time, temperatures in Phoenix **hit 100 degrees for the 100th day in a row**. The longest previous 100-degree streak was 76 days in 1993."



Daily high temperatures since 1970 in Phoenix. Credit: NOAA Regional Climate Centers via *The Applied Climate Information System*.

In other climate change-linked news stories, in Asia Typhoon Yagi drew media attention as it impacted several countries. For example, ***CNN* journalist Kathleen Magramo reported**, "Typhoon Yagi, Asia's most powerful storm this year, has left dozens dead since sweeping across southern China and Southeast Asia last week, leaving a trail of destruction with its intense rainfall and powerful winds. After hitting the Philippines, where it killed more than a dozen people, it churned westwards towards southern China and shortly after parts of Vietnam,

Thailand, Myanmar and Laos. Nearly a week since it made landfall, many farms and villages in northern parts of Vietnam and neighboring Thailand remain under water as communities struggle to cope with severe flooding and the looming threat of landslides. In Vietnam, the death toll has risen to at least 226 as a result of the storm and the landslides and flash floods it triggered, the government's disaster agency said Thursday, according to Reuters. The storm caused widespread damage to infrastructure and factories. Video captured by a car's dashcam earlier this week showed the moment a steel bridge collapsed over the engorged Red River in Vietnam's Phu Tho province, plunging drivers into the raging waters. The downpours also inundated Thailand's northern province of Chiang Rai, submerging homes and riverside villages, making rescue efforts difficult. At least 33 people have died across Thailand since mid-August due to rain-related incidents, with at least nine deaths this week after Yagi, Reuters reported citing the local government. Storms are being made more intense and deadlier by the warming ocean, scientists have long warned. While developed nations bear a greater historical responsibility for the human-induced climate crisis, developing nations and small-island states are suffering the worst impacts".

Flooding in several locations in September generated stories with links to a changing climate. For example, ***New York Times* journalists Austyn Gaffney and Somini Sengupta reported**, "Chad. Vietnam. Austria. The American South. In very disparate regions of the world, extreme rainfall in recent weeks has killed thousands of people, submerged entire towns, set off landslides and left millions without power. It's a harbinger of the wild weather events that are a hallmark of climate change, driven by the burning of fossil fuels, and it is highlighting the need to urgently adapt, in rich and poor countries alike. Bursts of extreme rainfall are making both coastal and riverine flooding more dangerous and unpredictable. "Extreme events are getting stronger everywhere, so we should expect floods to be bigger regardless of where we are," said Michael Wehner, a scientist at Lawrence Berkeley National Laboratory. "There

"Extreme events are getting stronger everywhere, so we should expect floods to be bigger regardless of where we are."

The swollen Elbe river in Dresden, Germany, on September 17. Photo: Filip Singer/*EPA, via Shutterstock*.

is no question that these kinds of floods all over the world are getting worse." What's the climate connection? Some of the recent deadly floods, like the landslides in Kerala, in southern India, earlier this summer, can be directly attributable to human-induced climate change.

A scientific study, released in August, found that the downpour that caused the landslide was 10 percent heavier because of human-caused climate change. There are no similar attribution studies yet for the floods of recent weeks. Though some studies are underway, there simply aren't enough resources to carry out an attribution study for every single event". Meanwhile, ***Guardian* correspondent Eromo Egbejule reported**, "More than 200 inmates escaped from a prison in north-east Nigeria in the aftermath of the worst flooding there in over two decades, authorities have announced. There have been 37 deaths in Borno state after parts of its capital, Maiduguri, were overrun by water on 9 September following the collapse of a dam, according to the National Emergency Management Agency (NEMA). As many as 200,000 others have been displaced. Residents of the city said some areas were still flooded on Monday when the president, Bola Tinubu, visited. In a statement on Sunday,

Abubakar Umar, a spokesperson for the Nigerian Correctional Service (NCS), said officials discovered that 281 inmates had escaped while being transferred to "a safe and secure facility" after their prison was flooded. Seven prisoners were recaptured while 274 others remain at large....People displaced by the torrential rains are living in temporary shelters set up in six camps across the city. Maiduguri, the birthplace of a 15-year insurgency by the jihadist group Boko Haram, was once home to camps in some of the same locations for internally displaced persons (IDPs) but state authorities, keen to get people back to the rural areas, began closing them in the last three years. Relief materials have come from the federal government and the United Arab Emirates. As many as 31.8 million Nigerians are already at risk of acute food insecurity, according to the UN's Food and Agriculture Organization (FAO). Aid workers say things could get worse in the coming weeks, especially in northern Nigeria which is at the centre of the extreme weather crisis. There are also fears of potential cholera outbreak in the crowded camps. "The area is now on high alert for outbreaks of diseases including cholera, malaria, and typhoid as well as animal and zoonotic diseases," the FAO said in a statement. In April, the Nigeria Hydrological Services Agency launched the 2024 Annual Flood Outlook, warning of floods across most of Nigeria's 36 states. But the rains surpassed the annual average as the impact of climate change ramp up around the globe".

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There have been 37 deaths in Borno state after parts of its capital, Maiduguri, were overrun by water on 9 September following the collapse of a dam. Photo: Musa Ajit Borno/*AP*.

Flood events linked to Hurricane Helene that made landfall in the US in late September also generated climate-related media stories. For example, ***Washington Post* journalists Sarah Kaplan, Shannon Osaka and Dan Stillman wrote**, "Every year on Aug. 20, meteorologists at Colorado State University ring a bell to signal the start of peak hurricane season – a weeks-long stretch when hot ocean temperatures tend to generate frequent and destructive storms. But this year, the tradition gave way to an eerie, echoing quiet, with storm activity in the Atlantic at its lowest level in 30 years despite projections of a historic season. That lull came to a decisive end this week, when Hurricane Helene slammed into Florida's Big Bend with violent, deadly force. Fueled by exceptionally warm Caribbean waters, the Category 4 storm is one of the biggest to ever make landfall in the United States – and forecasters are already warning that additional cyclones are hot on its heels. This lopsided hurricane season illustrates the challenges facing forecasters as climate

change makes extreme weather less predictable and more intense. Even as some scientists say that Helene's rapid growth and historic rainfall are signatures of a storm influenced by human-caused warming, they are still striving to understand whether this year's unusual storm activity is a fluke or a sign of things to come. "Is every season going to be like this? It's hard to say," said Phil Klotzbach, a meteorologist at Colorado State University. "We'll just have to keep our eyes to the sky." Scientists have growing evidence that major hurricanes – those at or above Category 3 – are increasing in frequency, and many point to climate change as a cause. But at this point, the data is not definitive on whether the overall number of storms will increase".

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Megan Kessler wades through storm surge flooding in Gulfport, Florida. as Hurricane Helene passes through. Photo: Thomas Simonetti/*Washington Post*.

In other ecological or meteorological stories links to climate change or global warming, wildfires in Portugal earned media attention. For example, ***Associated Press* correspondent Raf Casert wrote**, "Devastating floods through much of Central Europe and deadly wildfires in Portugal are joint proof of a "climate breakdown" that will become the norm unless drastic action is taken, the European Union's head office said Wednesday. "Make no mistake. This tragedy is not an anomaly. This is fast becoming the norm for our shared future," said EU Crisis Management Commissioner Janez Lenarcic. The worst flooding in years moved Tuesday across a broad swath of Central Europe, taking lives and destroying homes. At the other end of the 27-nation EU, raging fires through northern Portugal have killed at last six people. "Europe is the fastest warming continent globally and is particularly vulnerable to extreme weather events like the one we are discussing today. We could not return to a safer past," Lenarcic told EU lawmakers in Strasbourg, France. He warned that beyond the human cost, nations are also struggling to cope with mounting bills for repairing the damage from emergencies and the lengthy recovery from disaster. "The average cost of disasters in the 1980s was 8 billion euros per year. More recently in 2021 and in 2022, the damage is surpassed 50 billion euros per year, meaning the cost of inaction is far greater than the cost of action," he said".

Wildfires, droughts and land use changes relating to climate change in South America also garnered attention. For example, ***El País* journalists Naiara Galarraga, Carolina Mella and Fernando Molina wrote**, "Brazil and Bolivia have released 210 megatonnes of carbon dioxide in 2024 due to a devastating regional wave of fires aggravated by a historic drought. The fires are causing enormous havoc in Ecuador, Brazil, Bolivia, Peru, Venezuela and Argentina as the southern hemisphere enters spring. Damage to land and the atmosphere. The burning of vegetation has triggered greenhouse gas emissions, the European Atmospheric Monitoring Service Copernicus warned this week…the environmental situation is especially serious in Bolivia, in the Brazilian

Amazon and in another ecosystem called the Pantanal, which are emitting the record amount of gases into the atmosphere in 20 years. So far this year, Brazil has released more than 180 megatonnes of carbon dioxide, Bolivia, 30, according to Copernicus. Specialists and authorities point to arsonists, to intentional fires, because as the wave of fire advanced, countries have banned its use for forest and agricultural management. They are therefore the work of irresponsible and inept farmers or of criminals who use fire to pave the way for the destruction of the forest. This season, the usual impunity has been joined by the worst drought in decades as an ally".

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A man is part of a group of firefighters and neighbors fighting a forest fire in Intiyaco, Córdoba province Argentina. Photo: STR/*EFE*.

Media coverage in September 2024 also featured ongoing ***cultural***-themed stories relating to climate change or global warming. Most prominently, the United Nations General Assembly meeting in New York City – with 'Climate Week' activities adjacent – generated media attention. For example, ***Wall Street Journal* reporter H. Claire Brown noted**, "Policymakers are confronting a huge funding gap in the global energy transition. In speeches and interviews at a major climate conference this week, some pointed to companies with high emissions to fill in gaps in needed financing. "We have to move beyond a voluntary commitment for the polluters who are causing this problem to pay to ameliorate this problem," said Sen. Brian Schatz (D., Hawaii) during a panel at Climate Week NYC's opening ceremony. The keynote speaker was Philip Davis, prime minister of the Bahamas, a member of the small island developing states group, which face greater climate hazard than other parts of the world. He lamented that government pledges of aid dollars tend to get caught up in local politics.

"Maybe you should start looking at the oil-producing companies," he said in an interview with The Wall Street Journal. "Why don't you just say, give us 2% of your profits? That's an idea"".

Many ***political*** and ***economic***-themed media stories about climate change or global warming also made news in September. For instance, the EU head office warned that extreme weather across Europe was linked to climate change and the press took notice. For example, ***Associated Press* correspondent Raf Casert wrote**, "Devastating floods through much of Central Europe and deadly wildfires in Portugal are joint proof of a "climate breakdown" that will become the norm unless drastic action is taken, the European Union's head office said... "Make no mistake. This tragedy is not an anomaly. This is fast becoming the norm for our shared future," said EU Crisis Management Commissioner

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A man carries a fire extinguisher while a metalworking warehouse burns in Sever do Vouga, Portugal that has been surrounded by wildfires. Photo Bruno Fonseca/*AP*.

Last, several September 2024 media stories featured several ***scientific*** themes in news accounts. For example, ***CNN* correspondent Laura Paddison reported**, "Summer broke global heat records for the second straight year, scientists have confirmed – putting 2024 firmly on track to be the hottest year in recorded history. The period between June and August – summer in the Northern Hemisphere – was the world's hottest such period since records began in 1940, according to data published Friday by Copernicus, Europe's climate change service. This summer was 0.69 degrees Celsius hotter than the 1991 to 2020 average, edging past the previous record set last summer by 0.03 degrees, Copernicus found. It is the latest in a slew of global heat records to fall but will not be the last, scientists warn, as humans continue to pump out planet-heating fossil fuels and drive up global temperatures. The impacts, and the toll on human health and lives, have been clear, as countries across the world endured brutal summer temperatures, fueling deadly heat waves, record-breaking wildfires and destructive storms. Even in the Southern Hemisphere's winter, heat has been extreme. Last month, Australia broke its national record for the hottest August day, clocking a temperature of 41.6 degrees Celsius (106.9 Fahrenheit). Meanwhile, temperatures in parts of Antarctica climbed 50 degrees Fahrenheit above normal in July. The Copernicus data confirms what seemed likely after the planet experienced its hottest June on record, followed in July by its hottest single days on record. Summer was capped off by the joint-hottest August on record, Copernicus confirmed Friday. With an average temperature of 16.82 degrees Celsius (62.28 Fahrenheit), it was 1.51 degrees Celsius warmer than an average August in the pre-industrial era, the time before humans started burning large amounts of fossil fuels. Taken together, the 12 months from September 2023 to August 2024 were the hottest on record for any year-long period, and 1.64 degrees Celsius warmer than pre-industrial levels, Copernicus found". Meanwhile, ***New York Times* journalist Austyn Gaffney noted**, "The summer of "brat," the Paris Olympics and political conventions may be winding down, but the heat in 2024 is still going strong. The

Figure 4. Examples of Brazilian newspaper front pages with climate change stories in September 2024.

southwestern United States' sizzling triple-digit temperatures this week mark the tail end of the hottest summer on record, according to a new European climate report. "We know that the warming of the planet leads to more intense and extreme climate events, and what we've seen this summer has been no exception," said Julien Nicolas, a climatologist with the Copernicus Climate Change Service, the European Union agency that published the assessment on Wednesday. Since 2018, the agency has been combining data like weather observations from balloons and satellites with computer models that simulate temperature and precipitation to get a picture of what's happening around the world. It pairs that picture with past weather conditions reconstructed back to 1940 to compute a global average temperature. June and August were the hottest June and August on record, according to the models, while July is not quite as clear. The National Oceanic and Atmospheric Administration, based in the United States, found that this July was three-hundredths of a Celsius degree hotter than July 2023, while Copernicus determined it was a few hundredths of a degree cooler than last year. For all practical purposes, that created a virtual tie, according to Karin Gleason of NOAA, speaking recently about her department's findings".

As a second example, research into flood events and climate change earned attention where ***Associated Press* correspondent Suman Naishadham reported**, "Human-caused climate change doubled the likelihood and intensified the heavy rains that led to devastating flooding in Central Europe earlier this month, a new flash study found. Torrential rain in mid-September from Storm Boris pummeled a large part of central Europe, including Romania, Poland, Czechia, Austria, Hungary, Slovakia and Germany, and caused widespread damage. The floods killed 24 people, damaged bridges, submerged cars, left towns without power and in need of significant infrastructure repairs. The severe four-day rainfall was "by far" the heaviest ever recorded in Central Europe and twice as likely because of warming from the burning of coal, oil and natural gas, World Weather Attribution, a collection of scientists that run rapid climate attribution studies, said Wednesday from Europe. Climate change also made the rains between 7% and 10% more intense, the study found". Meanwhile, ***New York Times* journalist Austyn Gaffney wrote**, "Europe faced catastrophic floodwaters that affected two million people earlier this month and transformed neighborhoods and urban centers into muddy rivers. At least 24 people died, and some were reported missing. That lethal deluge, known as Storm Boris, was made twice as likely by human-induced climate change, according to a new analysis by World Weather Attribution, an international group of scientists and meteorologists who study the role of climate change in extreme weather events. The storm dropped 7 to 20 percent more rain than a similar one would have in a preindustrial world, before humans started burning fossil fuels and releasing greenhouse gases that have increased

global temperatures. The world is heating up quickly: 2023 was the warmest year on record, and 2024 could still surpass it, according to the National Oceanic and Atmospheric Administration. In the simplest terms, warmer air holds more moisture that contributes to more intense and frequent rainfall. More than a half-dozen countries in Europe — including Poland, the Czech Republic, Austria, Romania, Hungary, Germany and Slovakia — saw record-breaking amounts of rain between Sept. 12 and Sept 15. The slow-moving, low-pressure system dumped up to five times September's average rainfall over those four days. The floodwaters led to power cuts and the closure of schools, factories and hospitals. But it was only one of many flooding events that have wreaked havoc across the world in recent months. Extreme rainfall that led to flooding and landslides has killed thousands across four continents: a downpour that caused a landslide in India that killed more than 230 people was 10 percent heavier because of climate change; flooding in West and Central Africa caused the deaths of more than 1,000 people and destroyed hundreds of thousands of homes. Adaptation measures may have helped lower death tolls in Europe, according to World Weather Attribution, especially when compared with intense regional floods in 1997 and 2002 when hundreds died. The continent has invested in forecasting and early warning systems as well as more flood defenses, like levees and bank reinforcements and put in place measures like early water reservoir releases to try to minimize damages. After pressure from the United Nations, 101 countries now have early-warning protocols, at least on paper, which is double the number that reported having them in 2015. Those early warnings led to mass evacuations like the one this month in Nysa, Poland, when 44,000 residents fled their town after officials warned an embankment with high water might breach. But flooding in a warming world will only get worse, according to experts, requiring even more adaptation and mitigation. The mechanisms created so far are not enough, said Maja Vahlberg, a climate risk consultant at the Red Cross Red Crescent Climate Center in the Netherlands".

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A Review of Media Coverage of Climate Change and Global Warming in 2024

OCTOBER "No 'climate havens'"

Clean up along the Swannanoa River continues during the aftermath of flooding caused by the remnants of Hurricane Helene in October 2024 in Asheville, NC. Photo: Nathan Fish/*USA Today*.

Media coverage of climate change or global warming in newspapers around the globe **crept up 5%** from September 2024. Coverage in October 2024 edged **1% higher** than October 2023.

October media coverage of climate change or global warming in newspapers around the globe crept up 5% from September 2024. Furthermore, coverage in October 2024 edged 1% higher than October 2023. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through October 2024.

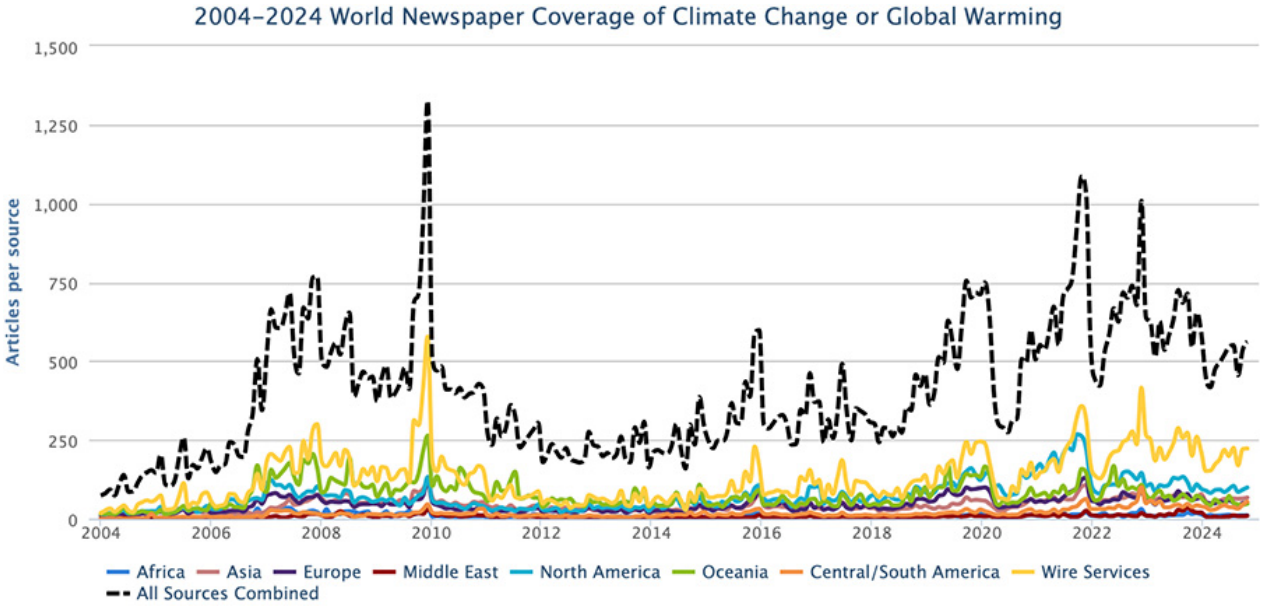

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through October 2024.

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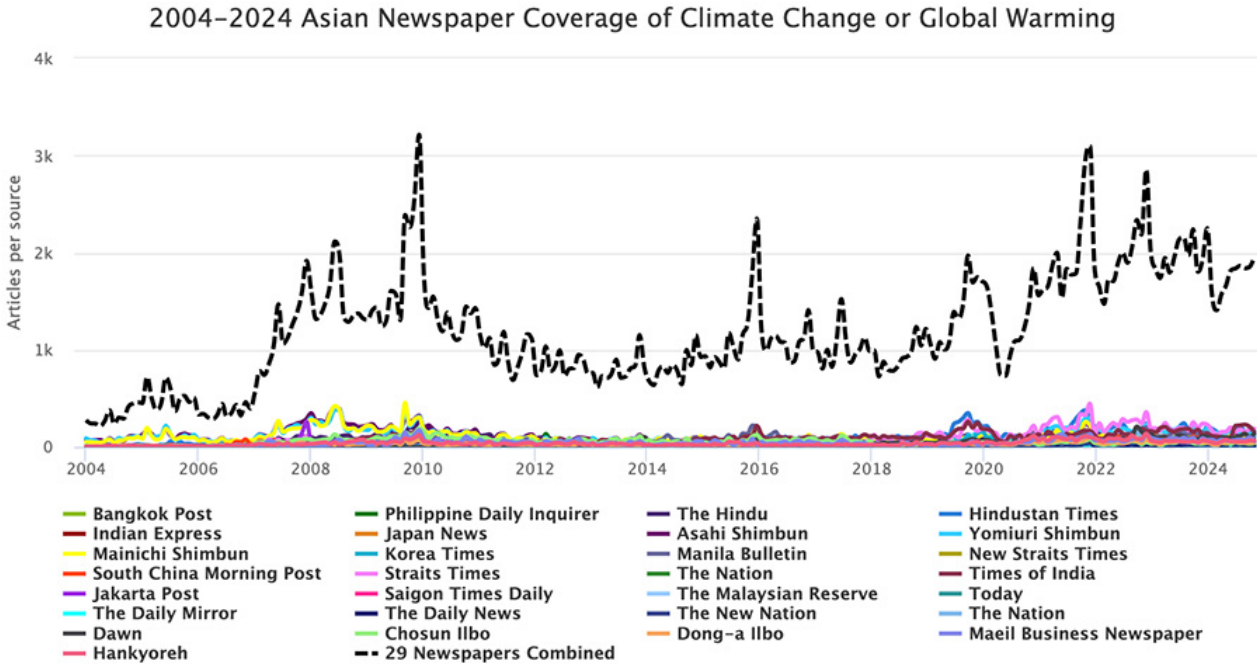

Figure 2. Coverage of climate change or global warming in Asia from January 2004 through October 2024.

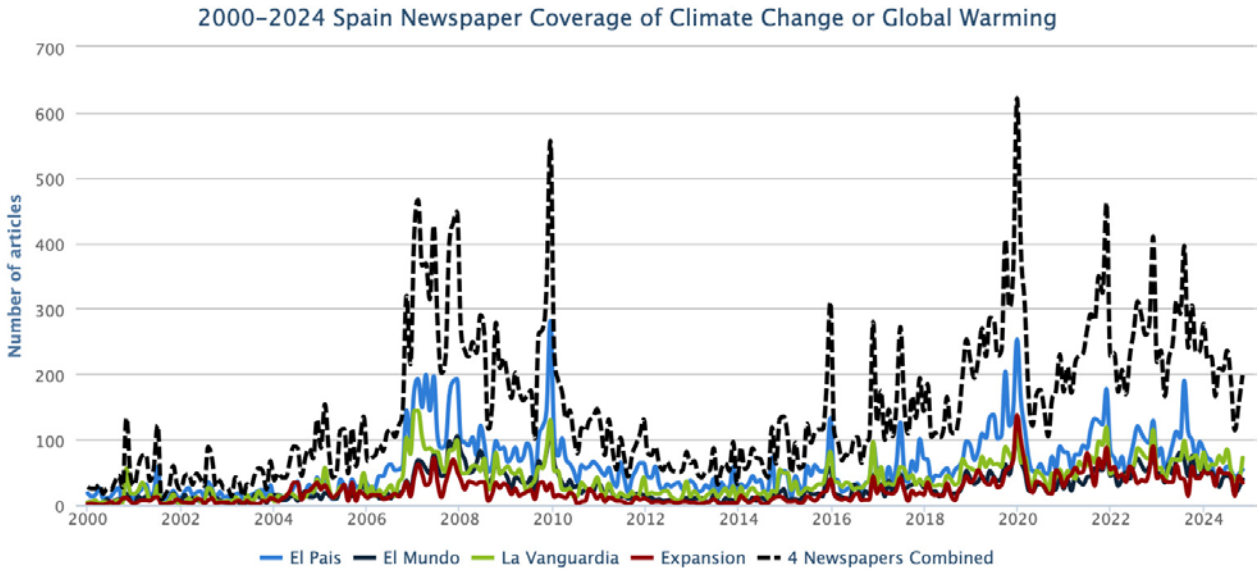

Figure 3. Spanish newspaper coverage of climate change or global warming from January 2000 through October 2024.

At the regional level, October 2024 coverage went up in the European Union (EU) (+2%), Asia (+5%), Oceania (+7%), North America (+7%), the Middle East (+17%), and Latin America (+18%) compared to the previous month of September. Meanwhile, coverage decreased in Africa (-5%) (Figure 2 shows these regional trends).

Among our country-level monitoring, for example Spanish print coverage increased 29% (Figure 3), and United States (US) print coverage increased 11% while US television coverage went up 33% in October 2024 compared to the previous month of September.

Our Media and Climate Change Observatory (MeCCO) team continues to provide three international and seven ongoing regional assessments of trends in coverage, along with 16 country-level appraisals each month. Visit our website for **open-source datasets and downloadable visuals**.

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A Review of Media Coverage of Climate Change and Global Warming in 2024

Regarding October 2024 content of news coverage about climate change, there were several stories with primarily ***scientific*** themes. For example, an open access ***Nature* journal article** entitled 'Mortality caused by tropical cyclones in the United States' by Rachel Young and Solomon Hsiang garnered attention in many outlets. For example, ***New York Times* journalist Lydia DePillis reported**, "Over the past week, the official death toll from Hurricane Helene has surpassed 100 as the vortex creeping inland from Florida submerged homes and swept away cars. But the full weight of lost lives will be realized only years from now – and it could number in the thousands. A paper published in the journal Nature on Wednesday lays out the hidden toll of tropical storms in the continental United States. Looking at 501 events from 1930 to 2015, researchers found that the average tropical storm resulted in an additional 7,000 to 11,000 deaths over the 15 years that followed. Overall during the study period, tropical storms killed more people than automobile crashes, infectious diseases and combat for U.S. soldiers. It's such a big number – especially compared with the 24 direct deaths caused by hurricanes on average, according to federal statistics – that the authors spent years checking the math to make sure they were right. "The scale of these results is dramatically different from what we expected," said Solomon Hsiang, a professor of global environmental policy at the Doerr School of Sustainability at Stanford University, who conducted the study with Rachel Young, the Ciriacy-Wantrup postdoctoral fellow at the University of California, Berkeley. The pair used a technique that has also provided a more complete understanding of "excess deaths" caused by Covid-19 and heat waves. It works by looking at typical mortality patterns and isolating anomalies that could have been caused only by the variable under study – in this case, a sizable storm… Cumulatively, the study found, storms weigh most on states that are hit repeatedly, like Florida, where Dr. Hsiang and Dr. Young attribute 13 percent of overall deaths to the stormy climate. Individual storms, however, are a heavier blow in states that are hit only occasionally, possibly because their systems and infrastructure are less prepared for it. The threat from hurricanes is expected to increase because of climate change. Although deaths rose throughout the 20th century as the population grew on the Atlantic and Gulf Coasts, Dr. Young and Dr. Hsiang's data shows an inflection point around 2001, as storms started to become more frequent. For that reason, even though direct deaths from storms have declined over the decades, Dr. Hsiang urged more research into the much greater number of deaths that occur long after the skies have cleared".

"A paper published in the journal Nature lays out the hidden toll of tropical storms in the continental US. Researchers found that the average tropical storm resulted in an additional **7,000 to 11,000 deaths** over the 15 years that followed. Overall during the study period, tropical storms killed more people than automobile crashes, infectious diseases and combat for U.S. soldiers."

Damage from Hurricane Helene in Horseshoe Beach, FL. Photo: Nicole Craine/*New York Times*.

In late October, the ***2024 report of the Lancet Countdown on health and climate change: facing record-breaking threats from delayed action*** – with co-authorship from MeCCO team members Lucy McAllister and Olivia Pearman

among contributors from around the world – generated significant coverage. For example, ***Guardian* correspondent Anna Bawdin wrote**, "Heat-related deaths, food insecurity and the spread of infectious diseases caused by the climate crisis have reached record levels, according to a landmark report. The Lancet Countdown's ninth report on health and the climate breakdown reveals that people across the world face unprecedented threats to their health from the rapidly changing climate…The report finds that in 2023, extreme drought lasting at least one month affected 48% of the global land area, while people had to cope with an unprecedented 50 more days of health-threatening temperatures than would have been expected without the climate crisis. As a result, 151 million more people faced moderate or severe food insecurity, risking malnutrition and other harm to their health. Heat related deaths among the over-65s rocketed by 167% in 2023, compared with the 1990s. Without the climate crisis, an ageing global population means such deaths would have increased, but only by 65%. High temperatures also led to a record 6% more hours of lost sleep in 2023 than the 1986–2005 average. Poor sleep has a profound negative effect on physical and mental health. Hotter and drier weather saw greater numbers of sand and dust storms, which contributed to a 31% increase in the number of people exposed to dangerously high particulate matter concentrations, while life-threatening diseases such as dengue, malaria and West Nile virus continue to spread into new areas as a result of higher temperatures. But despite this, "governments and companies continue to invest in fossil fuels, resulting in all-time high greenhouse gas emissions and staggering tree loss, reducing the survival chances of people all around the globe", the authors found. In 2023, global energy-related carbon dioxide emissions reached an all-time high, 1.1% above 2022, and the proportion of fossil fuels in the global energy system increased for the first time in a decade during 2021, reaching 80.3% of all energy".

"Extreme drought lasting at least one month affected 48% of the global land area, while people had to cope with an unprecedented 50 more days of health-threatening temperatures than would have been expected without the climate crisis. As a result, **151 million** more people faced moderate or severe food insecurity."

Impact of a drought in Spain in March 2023. Photo: Paola de Grenet/*The Guardian*.

United Nations (UN) **Emissions Gap Report** generated media attention. For example, ***New York Times* journalist Brad Plumer reported**, "One year after world leaders made a landmark promise to move away from fossil fuels, countries have essentially made no progress in cutting emissions and tackling global warming, according to a United Nations report issued on Thursday. Global greenhouse gas emissions soared to a record 57 gigatons last year and are not on track to decline much, if at all, this decade, the report found. Collectively, nations have been so slow to curtail their use of oil, gas and coal that it now looks unlikely that countries will be able to limit global warming to the levels they agreed to under the 2015 Paris climate agreement. "Another year passed without action means we're worse off," said Anne Olhoff, a climate policy expert based in Denmark and a co-author of the assessment, known as the Emissions Gap Report".

Next, media portrayals with primarily ***ecological*** and ***meteorological*** dimensions again drove significant coverage among overall climate

change or global warming accounts in October. To begin, hurricane Helene devastation and recovery efforts – with several stories linking to climate change and global warming – in the US earned considerable attention. For example, ***CNN* correspondent Steve Almasy reported**, "Hundreds of roads remain closed, hampering efforts to send aid to hard-hit communities. And for those who left before Helene, it's delayed their returns to check on family, friends and the state of their homes. Some areas are so inaccessible supplies are being delivered by mules and by air. In Weaverville, North Carolina, things are improving for around 5,000 residents, but "they're still pretty rough," Mayor Patrick Fitzsimmons told CNN on Wednesday. The mayor was speaking from the grocery store: the only place in town that had working Wi-Fi, he said. Meanwhile, more than 200 people in Buncombe County, North Carolina, remain unaccounted for as of Thursday afternoon, Sheriff Quentin Miller said at a news briefing. "We know these are hard times, but please know we're coming to get you," Miller said. "We will not rest until you are secure and you are being cared for." When asked for clarity on the number of people unaccounted for, county spokesperson Lillian Govus said the number fluctuates rapidly, as search and rescue efforts are ongoing. The county's register of deeds is knocking on doors to check on community members, Govus said during a news conference. "Once those crews have exhausted every resource they have at their fingertips, that's when the search and rescue efforts will conclude, and we will have a number to share at that time," Govus said. Relief efforts across the damaged areas are picking up as linemen restore power and the military and relief groups bring in people and supplies. On Wednesday, President Joe Biden deployed 1,000 troops from Fort Liberty in eastern North Carolina to the ravaged western part of the state. Biden visited North and South Carolina on Wednesday while Vice President Kamala Harris visited Augusta, Georgia, a city still under a curfew and a boil water advisory". Meanwhile, ***Washington Post* journalists Shannon Osaka and Sarah Kaplan noted**, "Asheville, N.C., seemed like an ideal place to escape the worst effects of global warming. In recent years, media outlets and real estate agents named the city a "climate haven" because of its cooler-than-normal temperatures in the South and a location far inland from the flooding-pummeled coasts. Last year, the Asheville Citizen Times reported on worries that the city would become overcrowded from climate-change migration. Then, the flooding came. In some areas of western North Carolina, four to five months of rain fell in less than three days. More than 40 people have died in Buncombe County, where Asheville is the county seat, as homes, businesses, roads and livelihoods were swept away in the rising waters of Hurricane Helene. The floods illuminate two truths about a world transformed by global warming, experts say. It is unlikely that any places will be truly safe from climate change – and even high-elevation, inland areas are vulnerable to drowning in a world where planetary warming is fueling heavier rains. It is a law of physics that, for

> "One year after world leaders made a landmark promise to move away from fossil fuels, countries have made no progress in cutting emissions and tackling global warming. Global greenhouse gas emissions soared to a record 57 gigatons last year and are not on track to decline much, if at all, this decade."

A natural gas field in Bolivia. Photo: A. Raldes/*Agence France-Presse*.

every degree Celsius increase in temperature, air is able to hold 7 percent more water vapor. This phenomenon increases the moisture available for storms, making individual events wetter than they otherwise would be and increasing the risk of unprecedented rain. The United States and countries around the globe are already experiencing what could lie in store. Last year, areas of Vermont were deluged by devastating rains that would have been exceedingly rare in an unchanged climate. This summer, a town in southern New Mexico was struck by eight floods in four weeks, after wildfires destroyed vegetation and subsequent rain funneled directly into neighborhoods. And just a few weeks ago, floods and heavy rain surged over Central Europe. Although some have called this age the "Pyrocene," because of growing wildfires, scientists also emphasize the world is heading toward a watery future of surging oceans and worsening floods".

Following on hurricane Helene's late September landfall, hurricane Milton's early October arrival in the US generated a lot of media hits (with several stories connecting the dots to a changing climate). For example, ***Associated Press* reporter Alexa St. John wrote**, "Human-caused climate change intensified deadly Hurricane Milton 's rainfall by 20 to 30% and strengthened its winds by about 10%, scientists said in a new flash study. The analysis comes just two weeks after Hurricane Helene devastated the southeastern United States, a storm also fueled by climate change. World Weather Attribution researchers said Friday that without climate change, a hurricane like Milton would make landfall as a weaker Category 2, not considered a "major" storm, instead of a Category 3. WWA's rapid studies aren't peer-reviewed but use peer-reviewed methods. The WWA compares a weather event with what might have been expected in a world that hasn't warmed about 1.3 degree Celsius since pre-industrial times. The team of scientists test the influence of climate change on storms by analyzing weather data and climate models, but in the case of Milton – which followed so shortly after Helene – the researchers used only weather observations data. WWA said despite using different approaches, the results are compatible with studies of other hurricanes in the area that show a similar hurricane intensity increase of between 10 and 50% due to climate change, and about a doubling in likelihood". For example, ***The New York Times* journalist Ana Ionova wrote**: "Climate change is drying up the Amazon, the largest river in the world. As a drought dries up stretches of the Amazon River, Brazil is turning to dredging to try to keep food, medicine and people flowing along the aquatic superhighway. The water level in several stretches of the Amazon River, which meanders for some 6,400 kilometers through South America, dropped last month to its lowest level ever recorded, according to data from the Geological Survey of Brazil. "The crisis has paralyzed the Amazon, a vital water superhighway that serves as virtually the only means of connecting forest communities and moving commerce in some of the most remote stretches of the planet." ***La Vanguardia* journalist Rosa Tristán noted**,"The lowering of the level of the great Amazon channels, to the point of making

"Asheville, NC, seemed like an ideal place to escape the worst effects of global warming. In recent years, media outlets and real estate agents named the city a "climate haven" because of its cooler-than-normal temperatures in the South and a location far inland from the flooding-pummeled coasts."

Asheville, North Carolina. Photo: G. Rose/*Getty Images*.

navigation unviable, has left thousands of communities cut off throughout the basin. The Government of Brazil has decided to dredge, in some places, the Negro River, while in Colombia they are looking for ways to bring humanitarian aid and in Bolivia the situation is causing thousands of people to leave the jungle towards safer places. Increasingly uncontrolled fires, deforestation that does not stop, together with extreme droughts and floods linked to climate change, and from 2023 accentuated by El Niño, are the fundamental factors that according to experts are behind this situation that is putting into effect the survival of numerous Amazonian populations is seriously endangered, while at the same time it threatens a unique biodiversity."

> "Climate change is drying up the Amazon, the largest river in the world. As a drought dries up stretches of the Amazon River, Brazil is turning to dredging to try to keep food, medicine and people flowing along the aquatic superhighway. The water level in several stretches of the Amazon River, which meanders for some 6,400 kilometers through South America, dropped last month to its lowest level ever recorded."

A much-depleted tributary of the Amazon, the Parana do Manaquiri. Photo: Raphael Alves/*EPA*.

Meanwhile, devastating flooding in Spain made news around Europe and around the world in October. Dozens of newspaper front pages around the world published photographs of cars piled up by the strong floods while several stories made links between the flooding and global warming or climate change. For an example in Spanish outlets, ***El País* journalist Manuel Planelles wrote**, "Hurricanes and torrential rains: the meteorological monsters fueled by human-caused global warming. The planet is experiencing a succession of extreme phenomena, such as the one suffered in recent hours in parts of the Valencian Community and Castilla-La Mancha, which scientific reports often conclude are fueled by climate change". As a second example, ***La Vanguardia* noted**, "To the human losses we must add the material losses, both in infrastructure, especially those used for transport, and in the agricultural sector, which may have lost the harvest of thousands of hectares. The effects of the cold drop have been catastrophic in many ways. And not only in the Valencian Community. Also, although to a much lesser extent, in Albacete, Cuenca, Almería, Málaga, Cádiz... There have always been extreme meteorological phenomena in Spain, capable of completely altering daily life. But it is well known that the climate crisis has exacerbated and increased their destructive power: with more heat in the atmosphere, meteorological phenomena become more violent. What happened in Valencia the day before yesterday reminds us of this once again." A third example is an **editorial in *El País* that remarked**, "The magnitude of the tragedy reinforces the obligation of public powers to analyze the preparation of Spain and the Spanish people in the face of an increasingly unpredictable meteorological situation and its effects on cities, towns and infrastructure, which must be rethought almost from scratch to adapt to new climatic conditions". As an example of international coverage, ***BBC* journalists Bethany Bell and Frances Mao reported**, "At least 158 people have died in Spain's worst flooding disaster in generations as rescuers battle odds to find survivors...Authorities have called the downpours and flooding "unprecedented". Many factors contribute to flooding, but a

warming atmosphere caused by climate change makes extreme rainfall more likely. Weather researchers have identified the likely main cause of the intense rainfall as a "gota fria" – a natural weather event that hits Spain in autumn and winter when cold air descends on warmer waters over the Mediterranean. However, the increase in global temperatures had led to the clouds carrying more rain, scientists told the BBC. The world has already warmed by about 1.1C since the industrial era began and temperatures will keep rising unless governments around the world make steep cuts to emissions. "No doubt about it, these explosive downpours were intensified by climate change," said Dr Friederike Otto, from Imperial College London, who leads an international group of scientists who try to understand the role that warming plays in these type of events. The death toll is the worst from floods in Spain since 1973, when at least 150 people were estimated to have died in the southeastern provinces of Granada, Murcia and Almeria".

"The magnitude of the tragedy reinforces the obligation of public powers to analyze the preparation of Spain and the Spanish people in the face of an increasingly unpredictable meteorological situation and its effects on cities, towns and infrastructure, which must be rethought almost from scratch to adapt to new climatic conditions."

Eva Defez, 50, is hugged by friends outside her home in Utriel (Valencia). Photo: Susana Vera/*Reuters*.

In October 2024, media representations also contained ***cultural***-themed stories relating to climate change or global warming. For example, every day engagements with energy – supply and demand – as it potentially relates to climate change or global warming fed news accounts in October. To illustrate, ***New York Times*** **journalist Brad Plumer reported**, "Demand for electricity around the world is rising faster than expected, making it harder for countries to slash their emissions and keep global warming in check, the International Energy Agency said…Over the next decade, the world is poised to add the equivalent of Japan's annual electricity demand to grids each year, driven by surging power needs for new factories, electric vehicles, air-conditioners and data centers, according to the agency's annual World Energy Outlook, a comprehensive report on global energy trends. In all, the agency now expects global electricity demand to be 6 percent higher in 2035 than it forecast last year. It's not all dire news for climate change: The report concludes that countries are likely to build enough low-emissions power plants by the end of the decade – primarily solar, wind and nuclear power – to match that rise in demand. Rapid growth in renewable energy should at least prevent global emissions from rising drastically and could cause coal, oil and natural gas use to peak this decade. But to stop global warming, many countries have pledged to reduce their emissions to zero by around midcentury. That goal is slipping out of reach: Countries would need to build low-carbon electricity sources twice as fast as they're currently doing between now and 2035 to meet their climate targets".

Last, ***political*** and ***economic***-themed media stories about climate change or global warming appeared in many television, radio and newspaper outlets in October. For example, ***Guardian*** **correspondent Jillian Ambrose reported**, "Britain's only remaining coal power plant at Ratcliffe-on-Soar in Nottinghamshire

will generate electricity for the last time on Monday after powering the UK for 57 years. The power plant will come to the end of its life in line with the government's world-leading policy to phase out coal power which was first signalled almost a decade ago. The closure marks the end of Britain's 142-year history of coal power use which began when the world's first coal-fired power station, the Holborn Viaduct power station, began generating electricity in 1882. The shutdown has been hailed by green campaigners as a major achievement for the government in reducing the UK's carbon emissions, providing international climate leadership, and ensuring a "just transition" for staff in Britain's coal industry. Michael Shanks, the minister for energy, said: "Today's closure at Ratcliffe marks the end of an era and coal workers can be rightly proud of their work powering our country for over 140 years. We owe generations a debt of gratitude as a country." The UK became the first country to set an end date for coal power from 2025 after putting in place increasingly stringent green regulations to reduce the running hours of its coal plants".

Meanwhile, in Mexico the swearing in of President Claudia Sheinbaum (also a contributor to the UN Intergovernmental Panel on Climate Change reports) earned news attention about her approach to climate change. For example, ***Associated Press* correspondents Fabiola Sánchez and Mariana Martínez Barba reported**, "Claudia Sheinbaum was sworn in Tuesday as Mexico's first female president, riding the enthusiasm over her predecessor's social programs but also facing challenges that include stubbornly high levels of violence. After a smiling Sheinbaum took the oath of office on the floor of Congress, legislators shouted "Presidenta! Presidenta!" using the feminine form of president in Spanish for the first time in over 200 years of Mexico's history as an independent country. The 62-year-old scientist-turned-politician receives a country with a number of immediate problems, also including a sluggish economy, unfinished building programs, rising debt and the hurricane-battered resort city of Acapulco… At her inauguration, Sheinbaum boosted the free trade agreement with the United States and Canada, saying "we know that economic

> "Over the next decade, the world is poised to add the equivalent of Japan's annual electricity demand to grids each year, driven by surging power needs for new factories, electric vehicles, air-conditioners and data centers."

Cooling towers of a shuttered nuclear power plant in Pennsylvania, which will reopen in 2028 to supply power to Microsoft data centers. Photo: Jim Lo Scalzo/*EPA*.

cooperation strengthens the three nations." There are areas where Sheinbaum could try to take Mexico in a new direction. For example, she has a Ph.D. in energy engineering and has spoken of the need to address climate change. But on Tuesday, she said she would cap oil production at 1.8 million barrels per day, which would be more than what the troubled state-owned company currently produces. "We are going to promote energy efficiency and the transition toward renewable sources of energy," she said". Meanwhile, ***Washington Post* journalists Mary Beth Sheridan, Dino Grandoni and Lorena Ríos noted**, "She was an energy engineer, a quiet, driven Mexican academic who'd worked at a major U.S. government lab and investigated some of the toughest problems in climate change. Claudia Sheinbaum was a natural choice when the prestigious U.N. Intergovernmental Panel on Climate Change selected scientists for a landmark report in 2014. It would warn the world was hurtling toward "irreversible" damage from greenhouse gases, and call for urgent action. Sheinbaum's contributions were "an added value for the team," said Manfred Fischedick, a professor in Germany who worked on the report. "And – I would like to

Figure 4. Examples of newspaper front pages with climate change stories in October 2024.

stress that aspect specifically – she never came across as a politician." Now, Sheinbaum is about to become Mexico's president. Her election has given hope to environmentalists and diplomats who've despaired as Mexico has gone from a global leader on climate change to a laggard. Yet Sheinbaum has a complicated record. She's the protégé of outgoing President Andrés Manuel López Obrador, known as AMLO, who sidelined green-energy projects and prioritized tapping petroleum fields. In her recent stint as Mexico City mayor, Sheinbaum loyally defended his policies – even as she introduced electric buses and covered the capital's massive food market with solar panels".

Finally, the much-anticipated US election – and the impacts the results have on climate politics and policy – earned coverage that picked up more speed in October. For example, ***Wall Street Journal*** **correspondents Collin Eaton and Benoît Morenne wrote**, "Oil companies are conveying an unlikely message to the GOP and its presidential candidate: Spare President Biden's signature climate law. At least the parts that benefit the oil industry. In discussions with former President Trump's campaign and his allies in Congress, oil giants including Exxon Mobil, Phillips and Occidental Petroleum have extolled the benefits of the Inflation Reduction Act. Many in the fossil-fuel industry opposed the law when it passed in 2022 but have come to love provisions that earmark billions of dollars for low-carbon energy projects they are betting on. Some executives in the largely pro-Trump oil industry are worried the former president, if re-elected, would side with conservative lawmakers who want to gut the IRA. They fear losing tax credits vital for their investments in renewable fuel, carbon capture and hydrogen, costly technologies requiring U.S. support to survive their early years".

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NOVEMBER "Get ahead of the game"

The construction project to build the Kayenta solar farms on the Navajo Nation, shown here in 2018, employed hundreds of people, nearly 90 percent of whom were Navajo citizens. Photo: Navajo Tribal Utility Authority/*Navajo Nation*.

Media coverage of climate change or global warming in newspapers around the globe **increased 24%** from October 2024. Coverage in November 2024 went **up 10%** from November 2023.

November media coverage of climate change or global warming in newspapers around the globe increased 24% from October 2024. Furthermore, coverage in November 2024 went up 10% from November 2023. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – from January 2004 through November 2024.

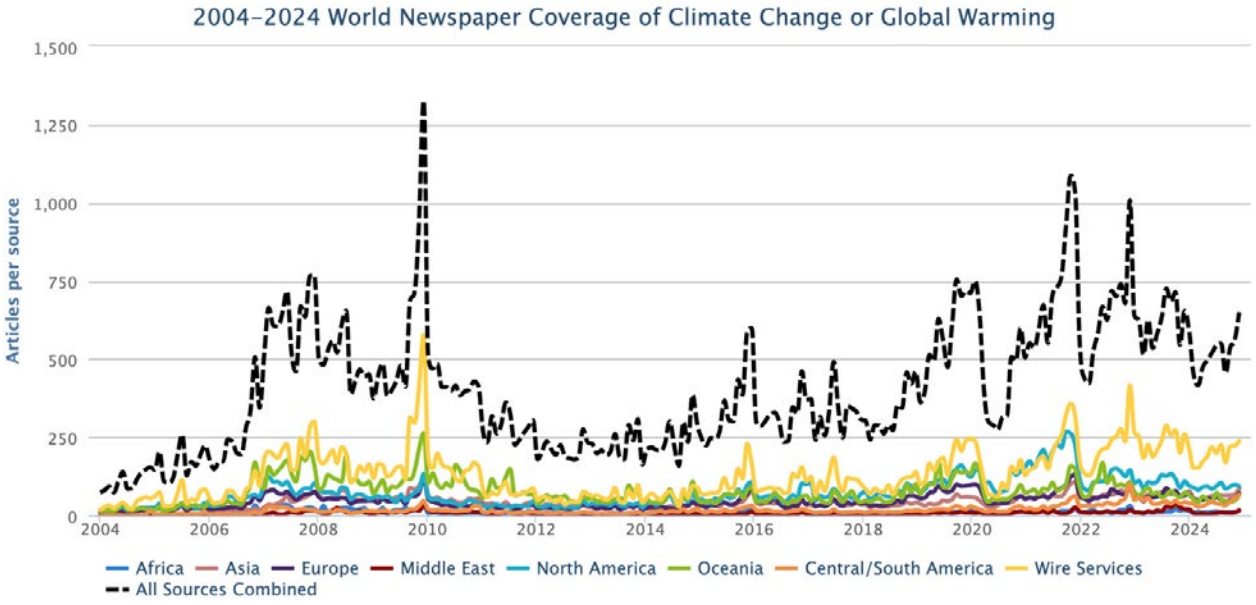

Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through November 2024.

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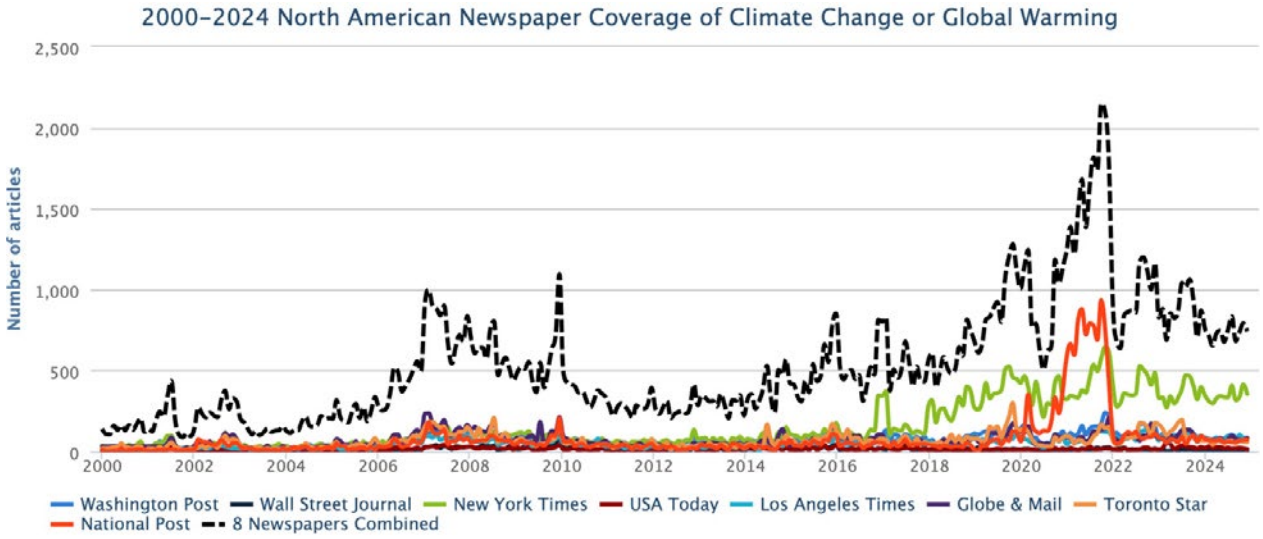


Figure 2. Coverage of climate change or global warming in North America – *Globe & Mail* (Canada), *Los Angeles Times* (US), *National Post* (Canada), *New York Times* (US), *Toronto Star* (Canada), *USA Today* (US), *Wall Street Journal* (US), and *Washington Post* (US) – from January 2004 through November 2024.

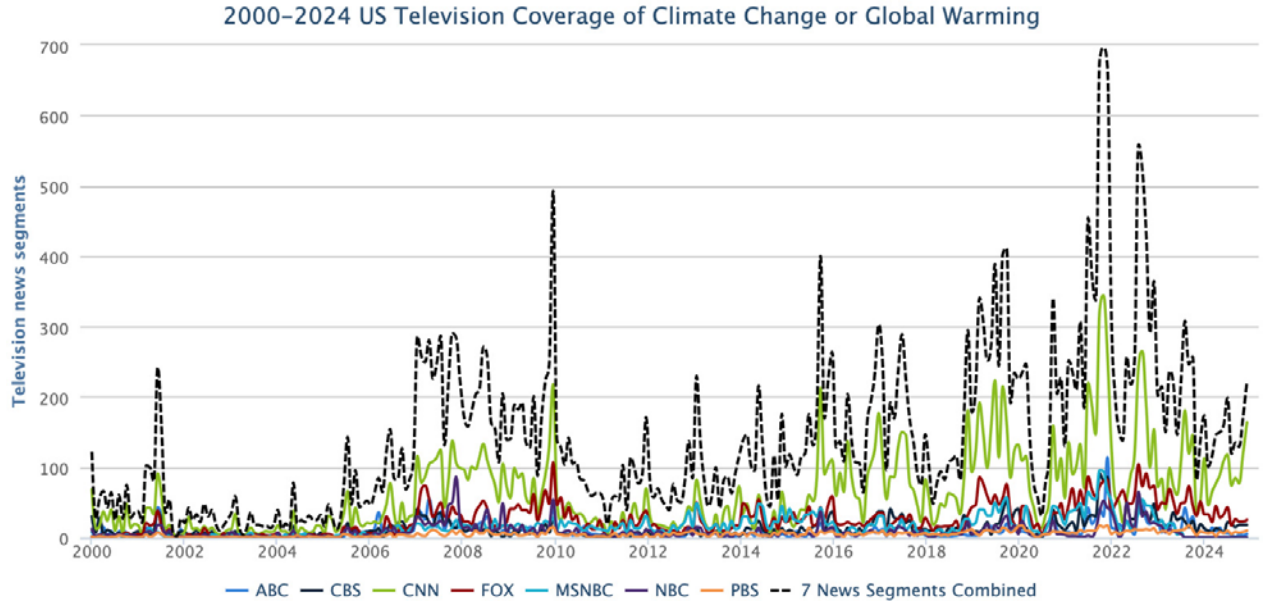


Figure 3. US television – *ABC*, *CBS*, *CNN*, *FOX*, *MSNBC*, *NBC*, and *PBS* – coverage of climate change or global warming from January 2000 through November 2024.

At the regional level, November 2024 coverage went up in all regions except in North America which dropped 6% (figure 2 shows this regional trend): Latin America rose 20%, Asia increased 26%, the European Union (EU) went up 40%, Oceania jumped 41%, Africa surged 47%, and the Middle East shot up 70% compared to the previous month of October.

Among our country-level monitoring, for example United States (US) print coverage dropped 12% while US television coverage went up 29% (see Figure 3) in November 2024 compared to the previous month of October. The push of large global events like the United Nations (UN) climate negotiations (COP29) and the pull of domestic US elections contributed to these differing trends in a finite news hole particularly in daily print media sources.

To begin, ***political*** and ***economic***-themed media stories about climate change or global warming dominated television, radio and newspaper outlets in November. For example,

the outcome of the US Presidential election generated news coverage around the world that considered how the incoming second Trump Administration climate policy stances may influence progress at international and national levels. For example, ***Le Monde* journalist Matthieu Goar reported**, "At 73, Tom Vilsack is having a moment of political déjà vu. On Tuesday, November 19, the US Secretary of Agriculture spoke at the United Nations climate change summit, COP29, to defend the environmental record of outgoing president Joe Biden – a final stock take before once again handing over the reins to Donald Trump's administration. He was in the same post when Trump was first elected in 2016. With the Inflation Reduction Act (IRA), he said, the Biden administration had "delivered the most ambitious climate change clean energy and conservation agenda in US history." As for the continuation of that agenda, he said: "It isn't going to be the administration that continues this, it's going to be the people who have received the benefit... who understand [that] it's in their best interest to preserve it and to continue it. The funding is available, it's already been committed." He listed some of the $369 billion (€348 billion) that the IRA has helped to start pumping into green industry, adding: "There's a ground swell, a momentum that I don't think an incoming administration, regardless of its attitudes about climate, would be in a position to stop." Words very similar to those of Biden. "Some may seek to deny or delay the clean energy revolution that's underway in America, but nobody – nobody – can reverse it," the outgoing president quipped on Sunday, November 17, during a trip to Manaus, in the heart of the Brazilian Amazon rainforest, on the sidelines of the G20 summit. The incoming president, a climate change skeptic, has monopolized conversations at COP29. When he returns to lead the country that has emitted the most greenhouse gases in history, Trump has promised to withdraw from the Paris Agreement – as he did in 2017".

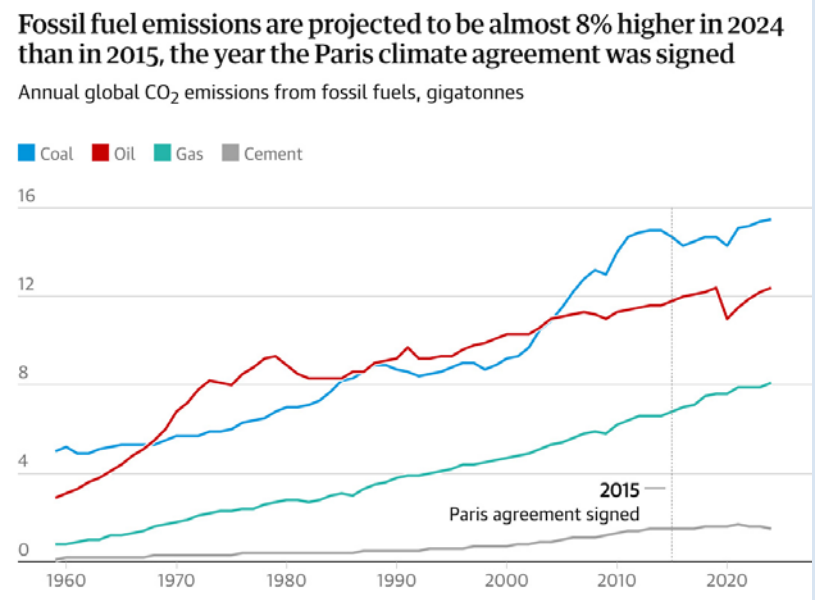
"The Biden administration had delivered the most ambitious climate change clean energy and conservation agenda in US history. As for the continuation of that agenda, he said: It isn't going to be the administration that continues this, it's going to be the people who have received the benefit... who understand [that] it's in their best interest to preserve it and to continue it."

US secretary of agriculture Tom Vilsack and Council on Environmental Quality president Brenda Mallory at COP29. Photo: Murad Sezer/*Reuters*.

This kind of coverage then spilled into news attention paid to uncertainty about progress to be made during the two-week United Nations (UN) climate negotiations (COP29) in Baku, Azerbaijan. For example, ***Guardian* environment editor Damien Carrington reported**, "There is 'no sign' of the transition away from burning fossil fuels that was pledged by the world's nations a year ago, with 2024 on track to set another new record for global carbon emissions. The new data, released at the UN's COP29 climate conference in Azerbaijan, indicates that the planet-heating emissions from coal, oil and gas will rise by 0.8% in 2024.

In stark contrast, emissions have to fall by 43% by 2030 for the world to have any chance of keeping to the 1.5C temperature target and limiting 'increasingly dramatic' climate impacts on people around the globe. The world's nations agreed at COP28 in Dubai in 2023 to 'transition away' from fossil fuels, a decision hailed as a landmark given that none of the previous 27 summits had called for restrictions on the primary cause of global heating. On Monday, the COP28 president, Sultan Al Jaber, told the summit in Baku: "History will judge us by our actions, not by our words." The rate of increase of carbon emissions has slowed over the last decade or so, as the rollout of renewable energy and electric vehicles has accelerated. But after a year when global heating has fueled deadly heatwaves, floods and storms, the pressure is on the negotiators meeting in Baku to finally reach the peak of fossil fuel burning and start a rapid decline. COP29 will focus on mobilizing the trillion dollars a year needed for developing nations to curb their emissions as they improve the lives of their citizens and to protect them against the now inevitable climate chaos to come. The summit also aims to increase the ambition of the next round of countries' emission-cutting pledges, due in February. The new data comes from the Global Carbon Budget project, a collaboration of more than 100 experts led by Prof Pierre Friedlingstein, at the University of Exeter, UK. "The impacts of climate change are becoming increasingly dramatic, yet we still see no sign that burning of fossil fuels has peaked. Time is running out and world leaders meeting at COP29 must bring about rapid and deep cuts to fossil fuel emissions." Prof Corinne Le Quéré, at the University of East Anglia, UK, said: "The transition away from fossil fuels is clearly not happening yet at the global level, but our report does highlight that there are 22 countries that have decreased their emissions significantly [while their economies grew]." The 22 countries, representing a quarter of global emissions, include the UK, Germany and the US".

> "There is 'no sign' of the transition away from burning fossil fuels that was pledged by the world's nations a year ago, with 2024 on track to set another new record for global carbon emissions. The new data, released at the UN's COP29, indicates that the planet-heating emissions from coal, oil and gas will rise by 0.8% in 2024."



Guardian graphic. Source: Global Carbon Budget, Friedlingstein et al. Earth System Science Data, 2024.

For example, ***BBC News*** **correspondents Georgina Rannard and Maia Davies wrote**, "The president of COP29's host country has told the UN climate conference that oil and gas are a "gift of God". Azerbaijan's President Ilham Aliyev criticized "Western fake news" about the

country's emissions and said nations "should not be blamed" for having fossil fuel reserves. The country plans to expand gas production by up to a third over the next decade. Shortly afterwards, UN chief António Guterres told the conference that doubling down on the use of fossil fuels was "absurd". He said the "clean energy revolution" had arrived and that no government could stop it. Separately, UK Prime Minister Sir Keir Starmer pledged further reductions on emissions, saying the UK will now aim for an 81% decrease by 2035. The UK called for other countries to match the new target. "Make no mistake, the race is on for the clean energy jobs of the future, the economy of tomorrow, and I don't want to be in the middle of the pack - I want to get ahead of the game," Sir Keir told the conference. Some observers had expressed concerns about the world's largest climate conference taking place in Azerbaijan. Its minister for ecology and natural resources - a former oil executive that spent 26 years at Azerbaijan's state-owned oil and gas company Socar – is the conference's chairman. There are also concerns that Azerbaijani officials are using COP29 to boost investment in the country's national oil and gas company. But addressing the conference on its second day, President Aliyev said Azerbaijan had been subject to "slander and blackmail" ahead of COP29. He said it had been as if "Western fake news media", charities and politicians were "competing in spreading disinformation... about our country". Aliyev said the country's share in global gas emissions was "only 0.1%". "Oil, gas, wind, sun, gold, silver, copper, all... are natural resources and countries should not be blamed for having them, and should not be blamed for bringing these resources to the market, because the market needs them." Oil and gas are a major cause of climate change because they release planet-warming".

Many media accounts also examined various country positions and actions relating to COP29 as well as concurrent political dynamics. For example, ***El Observador* journalist Andrés Fidanza reported**, "Argentine Foreign Minister Gerardo Werthein assured in exclusive statements to *El Observador*'s special envoy that Argentina will not abandon the Paris Agreement, although the government is in the process of reviewing its position regarding this treaty and other international commitments related to climate change. "We are simply re-evaluating our positions," Werthein said, adding that there are elements of the Paris Agreement with which Javier Milei's government does not agree. This approach was reaffirmed by Werthein days ago in an interview with *The New York Times*, where he said that Argentina is reviewing its participation in all climate agreements. However, so far, no decision has been made to withdraw. And Werthein stressed that Argentina is not abandoning it. "We are not leaving the Paris agreement," he told this newspaper. The Paris Agreement, adopted in 2015 by 196 countries, aims to keep the increase in global average temperature well below 2 degrees Celsius compared to pre-industrial levels by limiting carbon emissions. It is a legally binding treaty and considered a central pillar of the global fight against climate change. President Milei, who has repeatedly questioned the causes attributed to climate change, maintains that the phenomenon is real, but attributes it to natural historical cycles , ruling out that it is exclusively caused by human activity. This approach differentiates him from the predominant narrative in the scientific community and in international organizations".

Central to COP29 were deliberations, discussions, debates and decisions regarding climate finance. Media stories covered these dynamics each step of the way across the two weeks of negotiations in November. During the negotiations, for example ***Hindustan Times* journalist Jayashree Nandi reported**, "After developing countries rejected the first draft on the new collective quantified goal (NCQG), on Tuesday, co-chairs of the programme on NCQG at the COP 29 climate talks in Baku released another iteration on Wednesday morning that runs into 34 pages. The options span a wide range reflecting priorities and preferences of all negotiating groups among developed and developing countries -- from a floor of $100

billion to $ 2 trillion. It also has options for contributors, reflecting the evolved and dynamic nature of emissions and their economic capabilities. NCQG, a new finance target to replace the Paris Agreement's $100 billion a year, is one of the desired outcomes of the Baku climate talks, although most experts believe that achieving this will be tough. The drafting process indicates this. The latest draft suggests that NCQG is meant to accelerate the achievement of Article 2 of the Paris Agreement (to try and keep global warming to 1.5 degrees C over pre-industrial levels and to limit it to under 2 degrees C) and will "[address] implementation of current nationally determined contributions, national adaptation plans and adaptation communications, including those submitted as adaptation components of nationally determined contributions, increase and accelerate ambition, and reflect the evolving needs of developing country Parties, and the need for enhanced provision and mobilization of climate finance from a wide variety of sources and instruments and channels". On provision and mobilization , the draft provides three options with several sub-options. The options include: a direct provision and mobilization goal; a multi-layered approach, including investment, provision and mobilization: and a combination of the first two options. The mobilization goal has 6 sub-options. These sub-options have a very wide range -- from a NCQG of $100 billion to $1 trillion, $1.1 trillion, $1.3 trillion and $2 trillion, all per year, with the timeline being 2025-29 in one case, 2025-30 in another, 2025-35 in a third, 2026-30 in a fourth, and, simply, by 2030 in a sixth. The draft also suggests that developed countries provide at least $441 billion a year as grant, although there are options in terms of whether this will be part of the goal or in addition to it. The draft shows that pretty much every option is on the table. It also shows the very wide, polarized views on NCQG".

"The language of world leaders speaking at the United Nations climate summit was diplomatic, but the underlying message was clear: There's friction over the big issue at the conference. The negotiations are focused on delivering a new plan to provide developing countries with funds to adapt to a warming world."

Delegates at the COP29 climate summit in Baku, Azerbaijan, on Wednesday. Photo: Maxim Shemetov/*Reuters*.

Meanwhile, ***New York Times* correspondents David Gelles and Brad Plumer wrote**, "The language of world leaders speaking on Tuesday at the United Nations climate summit was diplomatic, but the underlying message was clear: There's friction over the big issue at the conference. The negotiations are focused on delivering a new plan to provide developing countries with funds to adapt to a warming world. Ali Mohamed, Kenya's climate envoy, said there was widespread agreement that cutting emissions and making countries more resilient to storms, floods and heat would require "trillions" of dollars. But just days into the talks, there were pointed comments from the leaders and squabbling in the negotiating rooms about the details, including exactly how much money should be raised, who should pay, where it should come from and how it should be spent. "How? Where? By whom?" said Mr. Mohamed,

the lead negotiator for the African group of countries. "That's the discussion that's currently underway." The financing goal is meant to replace an annual target of $100 billion that was set in 2009 and finally met two years late, in 2022". Elsewhere, ***Guardian* correspondents Adam Morton, Fiona Harvey, Patrick Greenfield, Dharna Noor and Damian Carrington reported**, "Major rich countries at UN climate talks in Azerbaijan have agreed to lift a global financial offer to help developing nations tackle the climate crisis to $300bn a year, as ministers met through the night in a bid to salvage a deal. The Guardian understands the Azeri hosts brokered a lengthy closed-door meeting with a small group of ministers and delegation heads, including China, the EU, Saudi Arabia, Brazil, the UK, US and Australia, on key areas of dispute on climate finance and the transition away from fossil fuels. It came as the COP29 summit in Baku, which had been due to finish at 6pm Friday, dragged into Saturday morning. A plenary session had been planned for 10am but did not eventuate….Multiple sources said the EU and several members of the umbrella group of countries including the UK, US and Australia had indicated they could go to $300bn in exchange for other changes to a draft text released on Friday. The Guardian understands that the UN secretary general, António Guterres, was ringing round capitals to push for a higher figure. Japan, Switzerland and New Zealand were understood to be among the countries resistant to the $300bn figure late on Friday. A $300bn offer would still fall well short of what developing countries say is necessary, and would likely draw sharp criticism if included in an updated text expected later on Saturday. But with some ministers booked to leave Baku in the hours ahead, countries face a decision on what they are prepared to accept. Several ministers from rich nations have argued that a deal may be easier now than next year, when Donald Trump will be US president and right-wing governments could be returned at elections in several countries, including Germany and Canada, and they do not want to make a commitment they cannot meet".

"When this year's United Nations climate summit in Baku, Azerbaijan, ended on Sunday, most developing countries and climate activists left dissatisfied. They had arrived at the summit with hopes that wealthy nations would agree to raise the $1.3 trillion per year that experts say is needed to help poor countries shift to cleaner energy sources and cope with extreme weather on a warming planet. **The final deal was more of a muddle.**"

US climate envoy John Podesta and deputy envoy Sue Biniaz, head into an elevator at Cop29 in Baku, Azerbaijan, after the climate summit went past its scheduled finish time. Photo: Joshua A Bickel/*AP*.

As COP29 wrapped up in later November, many news stores assessed the outcomes as well as shortcomings. For example, ***New York Times* journalist Brad Plumer wrote**, "When this year's United Nations climate summit in Baku, Azerbaijan, ended on Sunday, most developing countries and climate activists left dissatisfied.

They had arrived at the summit on Nov. 11 with hopes that wealthy nations would agree to raise the $1.3 trillion per year that experts say is needed to help poor countries shift to cleaner energy sources and cope with extreme weather on a warming planet. The final deal was more of a muddle. After several bitter all-night fights, rich countries promised to provide $300 billion per year by 2035, an increase from current levels, but well short of what developing countries had asked for. The deal also laid out an aspirational goal of $1.3 trillion per year, though that target depends on private sector funding and left plenty of unresolved questions for future talks. The new agreement "is a joke," one delegate from Nigeria said. Tina Stege, climate envoy for the Marshall Islands, was only slightly more measured: "It isn't nearly enough, but it's a start," she said. "Countries seem to have forgotten why we are all here. It is to save lives." A few commentators suggested that the funding deal was the best anyone could have hoped for, given that President-elect Donald Trump is about to pull the United States out of global climate agreements, while Europe is dealing with its own geopolitical turmoil. But the main reaction was disappointment. I've now covered six of these U.N. climate summits as a reporter, starting in 2017, and they often finish with attendees feeling ambivalent, if not angry. Governments spend the final hours deadlocked over how best to fight global warming and they usually compromise by watering down language – promises to "phase out" coal get softened to "phase down," for instance – and by saying they'll try to do better at future summits. Tina Stege walks down a hallway filled with various people and members of the news media at COP29. "It isn't nearly enough, but it's a start," said Tina Stege, climate envoy for the Marshall Islands, right. "Countries seem to have forgotten why we are all here. It is to save lives." One big reason that U.N. climate talks often seem maddeningly incremental is that, by design, they depend on voluntary cooperation among nations with wildly different interests, from big oil producers like Saudi Arabia to small islands menaced by sea-level rise. There's no global authority that can force countries to act if they don't want to. It's a genuinely hard coordination problem. The theory behind the landmark Paris climate agreement, backed by every country in 2015, was that voluntary public commitments by nations would eventually spur greater action. Through peer pressure, countries would realize it was in their self-interest to shift to cleaner energy sources like wind, solar and nuclear power and help each other adapt to droughts and floods to avoid mass migration and widespread chaos. Whether that process is working depends on whom you ask…maybe there has been some progress, but it's too slow. The window is quickly closing to keep warming at relatively low levels". Meanwhile, ***New York Times* journalist Max Bearak wrote**, "Negotiators at this year's United Nations climate summit struck an agreement early on Sunday in Baku, Azerbaijan, to triple the flow of money to help developing countries adopt cleaner energy and cope with the effects of climate change. Under the deal, wealthy nations pledged to reach $300 billion per year in support by 2035, up from a current target of $100 billion. Independent experts, however, have placed the needs of developing countries much higher, at $1.3 trillion per year. That is the amount they say must be invested in the energy transitions of lower-income countries, in addition to what those countries already spend, to keep the planet's average temperature rise under 1.5 degrees Celsius. Beyond that threshold, scientists say, global warming will become more dangerous and harder to reverse. The deal struck at the annual U.N.-sponsored climate talks calls on private companies and international lenders like the World Bank to cover the hundreds of billions in the shortfall. That was seen by some as a kind of escape clause for rich countries. As soon as the Azerbaijani hosts banged the gavel and declared the deal done, Chandni Raina, the representative from India, the world's most populous country, tore into them, saying the process had been 'stage managed'".

Elsewhere in November, at the G20 meeting held concurrently in Brazil, Indonesia's President made news by declaring that all coal-fired power plants would be retired in the country within the next 15 years. For example, ***Associated***

***Press* correspondent Victoria Milko wrote**, "Indonesian President Prabowo Subianto has announced that his government plans to retire all coal and other fossil fuel-power plants while drastically boosting the country's renewable energy capacity in the next 15 years. "Indonesia is rich in geothermal resources, and we plan to phase out coal-fired and all fossil-fueled power plants within the next 15 years. Our plan includes building over 75 gigawatts of renewable energy capacity during this time," Subianto said at the summit of leaders of the Group of 20 major economies in Brazil…Subianto also said he was "optimistic" Indonesia would achieve net zero emissions by 2050, a decade sooner than the country's previous 2060 commitment. Experts and environmental activists welcomed the announcements but hedged their expectations. Indonesia is one of the world's largest producers and consumers of heavily polluting coal and most of its energy comes from fossil fuels. Over 250 coal-fired power plants are currently powering the country and more are being built, including at new industrial parks where globally-important materials like nickel, cobalt and aluminum are being processed. In 2022, Indonesia's energy sector emitted over 650 million tons of carbon dioxide, the world's seventh highest level, according to the International Energy Agency. Population and economic growth are expected to triple the country's energy consumption by 2050. Experts said that real changes need to be implemented on the ground in Indonesia quickly if the president is serious about his plans".

"Indonesian President Prabowo Subianto has announced that his government plans to retire all coal and other fossil fuel-power plants while drastically boosting the country's renewable energy capacity in the next 15 years. "Indonesia is rich in geothermal resources, and we plan to phase out coal-fired and all fossil-fueled power plants within the next 15 years. Our plan includes building over 75 gigawatts of renewable energy capacity during this time.""

Barges are fully loaded with coal on the Mahakam River in Samarinda, East Kalimantan, Indonesia. Photo: Dita Alangkara/*AP*.

However, media coverage of climate change or global warming in November was not merely all about politics, economics and policy. Several November stories also dealt with primarily ***scientific*** themes. For example, a ***Nature Communications Earth & Environment* study** about private aviation generate news attention. For example, ***Associated Press* journalist Seth Borenstein reported**, "Carbon pollution from private jets has soared in the past five years, with most of those small planes spewing more heat-trapping carbon dioxide in about two hours of flying than the average person does in about a year, a new study finds. About a quarter million of the super wealthy – worth a total of $31 trillion – last year emitted 17.2 million tons (15.6 million metric tons) of carbon dioxide flying in private jets, according to Thursday's study in the Nature journal Communications Earth & Environment.

That's about the same amount as the 67 million people who live in Tanzania, Private jet emissions jumped 46% from 2019 to 2023, according to the European research team that calculated those figures by examining more than 18.6 million flights of about 26,000 airplanes over five years. Only 1.8% of the carbon pollution from aviation is spewed by private jets and aviation as a whole is responsible for about 4% of the human-caused heat-trapping gases, the study said".

Elsewhere, a ***Scientific Reports* study** by Katarzyna Lindner-Cendrowska, Kamil Leziak, Peter Bröde, Dusan Fiala & Marek Konefał about climate change-related heat stress and 2026 World Cup soccer matches earned news attention. For example, ***Guardian* correspondent Ajit Niranjan reported**, "Footballers face a "very high risk of experiencing extreme heat stress" at 10 of the 16 stadiums that will host the next World Cup, researchers have warned, as they urge sports authorities to rethink the timing of sports events. Hot weather and heavy exercise could force footballers to endure temperatures that feel higher than 49.5C (121.1F) in three North American countries in 2026, according to the study. It found they are most at risk of "unacceptable thermal stress" in the stadiums in Arlington and Houston, in the US, and in Monterrey, in Mexico. The co-author Marek Konefal, from Wroclaw University of Health and Sport Sciences in Poland, said World Cups would increasingly be played in conditions of strong heat stress as the climate got hotter. "It is worth rethinking the calendar of sporting events now." Football's governing body, FIFA, recommends matches include cooling breaks if the "wet bulb" temperature exceeds 32C. But scientists are concerned the metric underestimates the stress athletes experience on the pitch because it considers only external heat and humidity. "During intense physical activity, huge amounts of heat is produced by the work of the player's muscles," said Katarzyna Lindner-Cendrowska, a climate scientist at the Polish Academy of Sciences and lead author of the study. "[This] will increase the overall heat load on the athlete's body." To overcome this, the researchers simulated temperatures that account for the players' speed and activity levels, as well as their clothing. They were only partly able to include the effects of exercise in the heat index".

> "Footballers face a very high risk of experiencing extreme heat stress at 10 of the 16 stadiums that will host the next World Cup, researchers have warned, as they urge sports authorities to rethink the timing of sports events. Hot weather and heavy exercise could force footballers to endure temperatures that feel higher than 49.5C (121.1F) in three North American countries in 2026, according to the study."
>
> - *Scientific Reports* study about climate change-related heat stress and 2026 World Cup soccer matches

England's footballers Conor Gallagher, Conor Coady and Declan Rice suffer during training in Qatar before the 2022 World Cup. Photo: Tom Jenkins/*The Guardian*.

Moreover, media portrayals in November also primarily covered ***ecological*** and ***meteorological*** stories. To begin, extremely harmful local pollution levels in Delhi, India – with several connections made to a warming planet – generated attention. For example, ***CNN* journalists Esha Mitra, Aishwarya S Iyer and Helen Regan reported**, "Inside Delhi's first ever clinic dedicated to pollution-related illnesses, Deepak Rajak struggles to catch his breath. The 64-year-old's asthma has worsened in recent days, and his daughter rushed him to the clinic, anxious about his rapidly deteriorating health. Sitting in the waiting room, Rajak tells CNN he has become "very breathless" and cannot stop coughing. "It's impossible to breathe. I just came by bus, and I felt like I was suffocating," he says. The specialist clinic at Delhi's Ram Manohar Lohiya (RML) hospital was set up last year to treat the growing number of patients affected by hazardous air pollution, which worsens every winter in the Indian capital. Outside, a throat-searing blanket of toxic smog has settled over the city since late last month, turning day into night, disrupting flights, blocking buildings from view and endangering the lives of millions of people. As of last week, nowhere else on the planet has air so hazardous to human health, according to global air quality monitors. It's become so bad that Delhi's Chief Minister Atishi, who goes by one name, declared a "medical emergency" as authorities closed schools and urged people to stay home. But that's not an option for Rajak, who relies on his dry-cleaning job to provide for his family. "What can I do? I have to leave the house to go to work," he says. "If I don't earn money, how will I eat? When I leave the house, my throat gets completely jammed. By evening it feels like I am lifeless." Rajak has already been hospitalized once this year as the smog aggravated his asthma. With no relief in sight from the hazardous pollution, his daughter Kajal Rajak says she fears he will need to be readmitted – an added financial burden when they're already struggling to pay for inhalers and expensive diagnostic tests. Even taking her father to the clinic was dangerous, she says. "You can't see what's in front of you," Kajal says. "We were at the bus stop, and we couldn't even see the bus number, or whether a bus is even coming – that's how hazy it was." In some parts of Delhi this week, pollution levels exceeded 1,750 on the Air Quality Index, according to IQAir, which tracks global air quality. A reading above 300 is considered hazardous to health. On Wednesday, the reading for the tiniest and most dangerous pollutant, PM2.5, was more than 77 times higher than safe levels set by the World Health Organization. CNN has reached out to the Indian Ministry of Forest Environment and Climate Change for comment. When inhaled, PM2.5 travels deep into lung tissue where it can enter the bloodstream, and has been linked to asthma, heart and lung disease, cancer, and other respiratory illnesses, as well as cognitive impairment in children".

"A throat-searing blanket of toxic smog in Delhi has settled over the city since late last month, turning day into night, disrupting flights, blocking buildings from view and endangering the lives of millions of people. As of last week, nowhere else on the planet has air so hazardous to human health, according to global air quality monitors."

Commuters step out in a foggy winter morning amid rising air pollution in Greater Noida, on the outskirts of Delhi. Photo: Sunil Ghosh/*Hindustan Times/Getty Images*.

MeCCO SPECIAL ISSUE 2024

A Review of Media Coverage of Climate Change and Global Warming in 2024

Figure 4. Examples of newspaper front pages with climate change stories in November 2024.

Also, the official end of the Atlantic hurricane season at the end of the month produced several accounts of connections between climate change, global warming and the 18 named storms including Beryl, Helene, Milton and Rafael. For example, ***Associated Press* correspondents Isabella O'Malley and Mary Katherine Wildeman reported**, "The 2024 Atlantic hurricane season comes to a close Saturday, bringing to an end a season that saw 11 hurricanes compared to the average seven, and death and destruction hundreds of miles from where storms came ashore on the U.S. Gulf Coast. Meteorologists called it a " crazy busy " season, due in part to unusually warm ocean temperatures. Eight hurricanes made landfall, in the U.S., Bermuda, Cuba, the Dominican Republic and Grenada…. Planet-warming gases like carbon dioxide and methane released by transportation and industry are causing oceans to rapidly warm. Several factors contribute to the formation of hurricanes, but unusually warm oceans allow hurricanes to form and intensify in places and times we don't normally anticipate, McNoldy said. "In other words, we never had a storm as strong as Beryl so early in the season anywhere in the Atlantic and we never had a storm as strong as Milton so late in the season in the Gulf of Mexico," he said. "I don't ever point to climate change as causing a specific weather event, but it certainly has its finger on the scale and makes these extreme storms more likely to occur," said McNoldy".

Finally, November 2024 media representations also contained ***cultural***-themed stories relating to climate change or global warming. For example, the devastating floods events in the region around Valencia, Spain generated several news accounts that made connections with climate change and global warming. For example, ***Guardian* correspondent Cash Boyle noted**, "Spaniards have taken to the streets of Valencia to demand the resignation of the regional president who led the emergency response to the recent catastrophic floods that killed more than 200 people. Floods that began on the night of 29 October have left 220 dead and nearly 80 people still missing. Residents are protesting over the way the incident was handled, with regional leader Carlos Mazón under immense pressure after his administration failed to issue alerts to citizens' mobile phones until hours after the flooding started. The Valencian government has been criticised for not adequately preparing despite the State Meteorological Agency warning five days before the floods that there could be an unprecedented rainstorm. Tens of thousands of people made their dismay known by marching in the city on Saturday. The official attendance was estimated to be about 130,000. Some protesters clashed with riot police in front of Valencia's city hall at the start of their march to the seat of the regional government, with police using batons to push them back… Concern about the risk of flooding in the region is not new. Members of Compromís, a leftwing alliance in the Valencian regional parliament, presented a proposal designed to tackle the issue in September 2023, but it was voted down by the government. Eva Saldaña of Greenpeace Spain has suggested that oil and gas companies "foot the bill" for this natural disaster, arguing that those industries have known about the climate crisis for more than six decades".

And relating to the politics of COP29 as they met cultural dimensions of social movements for climate action, Swedish activist Greta Thunberg was quoted in many media stories about climate change in the month of November. For example, ***Washington Post* correspondents Maxine Joselow, Chico Harlan, Julie Yoon and Joyce Lau reported**, "Roughly 100 world leaders are traveling to Baku, Azerbaijan, for the U.N. Climate Change Conference — even as scores are skipping the annual talks, known this year as COP29. In a Tuesday address before world leaders speak at the summit, U.N. Secretary General António Guterres described the previous year as a "master class in climate destruction," adding, "The sound you hear is the ticking clock." He also expressed optimism about the transition to clean energy, saying that "no group, no business and no government" can stop it. Swedish activist Greta Thunberg chose to skip the conference: Speaking Monday at a protest in Tbilisi, Georgia, she called the summit's host Azerbaijan "an authoritarian petrostate" and added that the choice of location was "beyond absurd"".

MeCCO SPECIAL ISSUE 2024

A Review of Media Coverage of Climate Change and Global Warming in 2024

DECEMBER "Disappointing results this year, worrying many nations"

Sunflowers appear wilted in a field amid a drought near the town of Becej, Serbia, in 2024. Photo: Darko Vojinovic/*AP*.

Media coverage of climate change or global warming in newspapers around the globe went **down 38%** from November 2024. Coverage in December 2024 **dropped 31%** from December 2023.

December media coverage of climate change or global warming in newspapers around the globe went down 38% from November 2024. Furthermore, coverage in December 2024 dropped 31% from December 2023. Figure 1 shows trends in newspaper media coverage at the global scale – organized into seven geographical regions around the world – across 21 years, from January 2004 through December 2024.

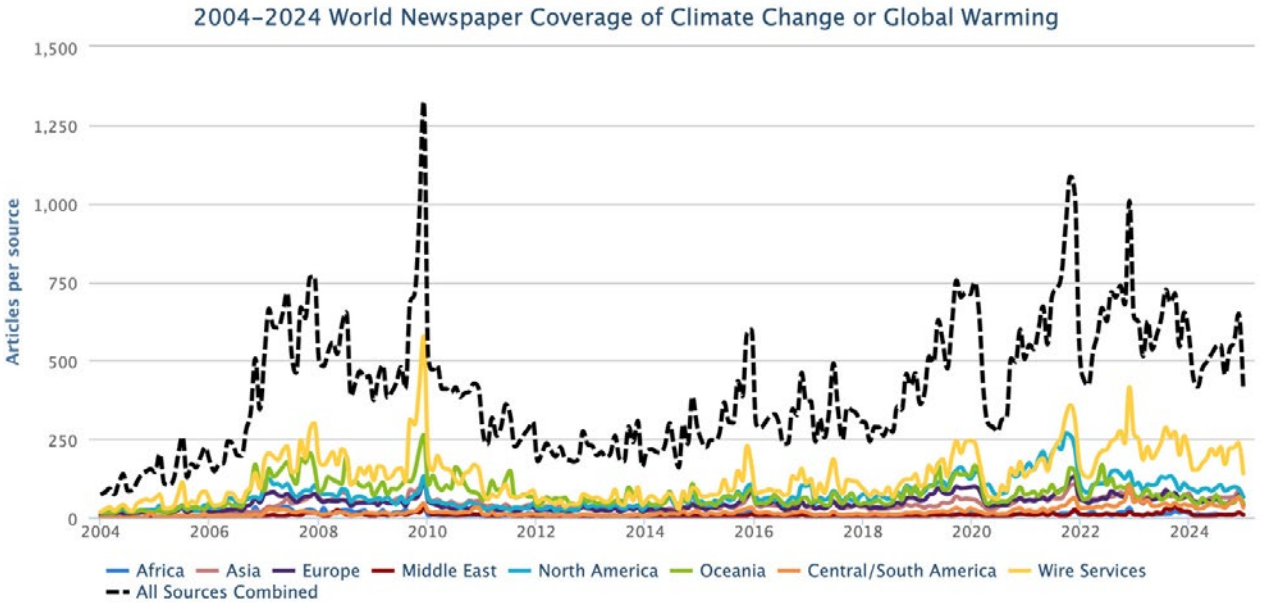


Figure 1. Newspaper media coverage of climate change or global warming in print sources in seven different regions around the world, from January 2004 through December 2024.

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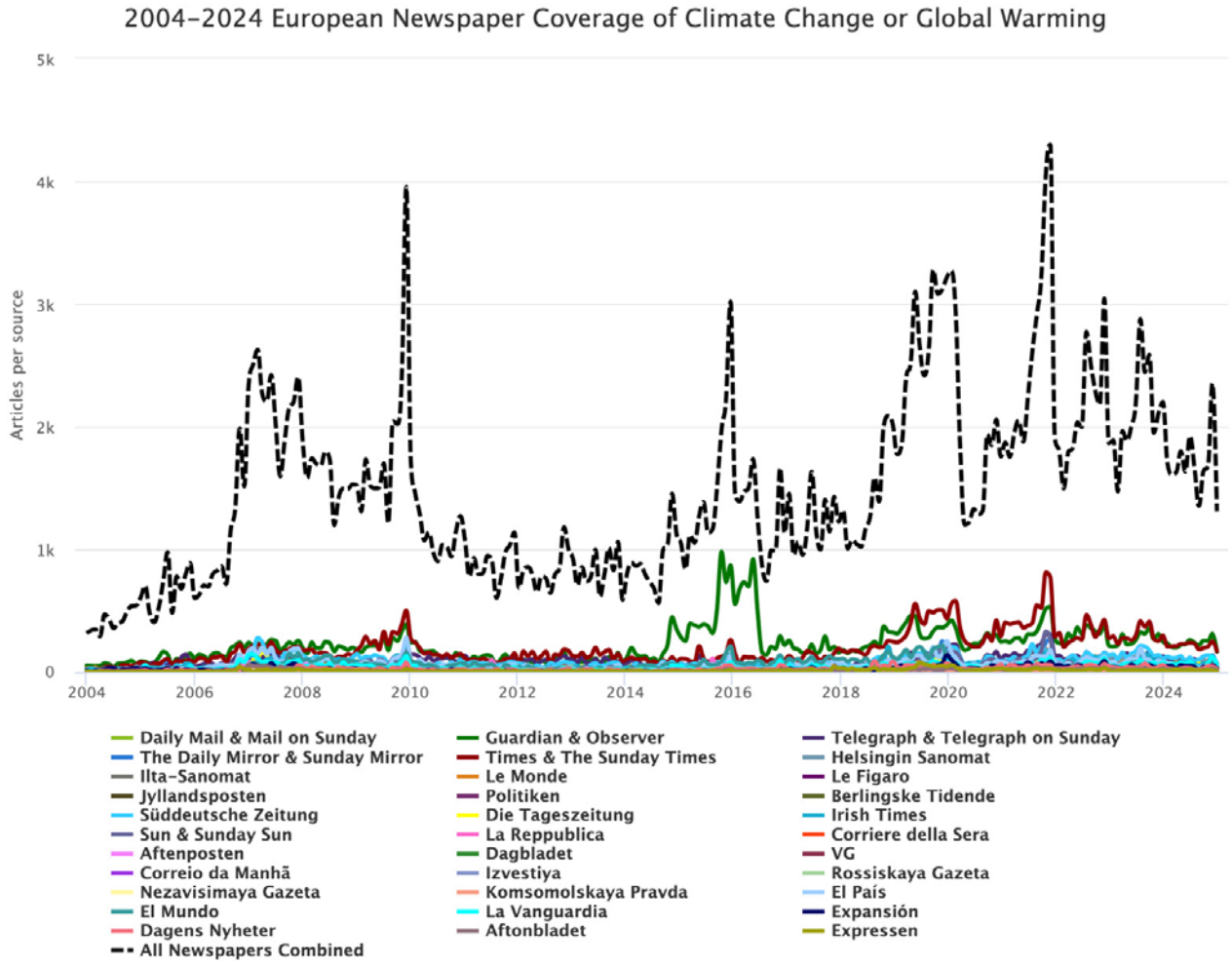

Figure 2. Coverage of climate change or global warming in 33 European newspapers across 12 countries from January 2004 through December 2024: *Jyllandsposten* (Denmark), *Politiken* (Denmark), *Berlingske Tidende* (Denmark), *Daily Mail and Mail on Sunday* (England), *Guardian and Observer* (England), *Sun and Sunday Sun* (England), *Telegraph and Telegraph on Sunday* (England), *The Daily Mirror and Sunday Mirror* (England), *Times and The Sunday Times* (England), *Helsingin Sanomat* (Finland), *Ilta-Sanomat* (Finland), *Le Monde* (France), *Le Figaro* (France), *Süddeutsche Zeitung* (Germany), *Die Tageszeitung* (Germany), *Irish Times* (Ireland), *La Repubblica* (Italy), *Corriere della Sera* (Italy), *Aftenposten* (Norway), *Dagbladet* (Norway), *VG* (Norway), *Correio da Manhã* (Portugal), *Izvestiya* (Russia), *Rossiskaya Gazeta* (Russia), *Nezavisimaya Gazeta* (Russia), and *Komsomolskaya Pravda* (Russia), *El País* (Spain), *El Mundo* (Spain), *La Vanguardia* (Spain), *Expansión* (Spain), *Dagens Nyheter* (Sweden), *Aftonbladet* (Sweden), and *Expressen* (Sweden).

At the regional level, December 2024 coverage decreased in all regions compared to the previous month of November: Oceania diminished 28%, North America dropped 29%, Asia dipped 30%, the European Union (EU) went down 44% (see Figure 2), Africa decreased 44%, the Middle East dropped 45%, and Latin America plummeted 50%.

Among our country-level monitoring, for example Korean print coverage (see Figure 3) went down 39%. Attention paid to the failed self-coup as well as impeachment and consequent political instability combined with the air disaster in South Korea in December apparently drew news stories from domestic treatment of climate change and global warming or other issues.

To start our analysis of themes of coverage, media portrayals in December drew on ***ecological*** and ***meteorological*** themes in various stories. In December, prominently the EU Copernicus Climate Change Service announce 2024 as the hottest year on record. This cohered with National Oceanic and Atmospheric Administration (NOAA) assessments and generated considerable media attention. For example, ***Guardian* environment editor Damien Carrington wrote**, "This year is now

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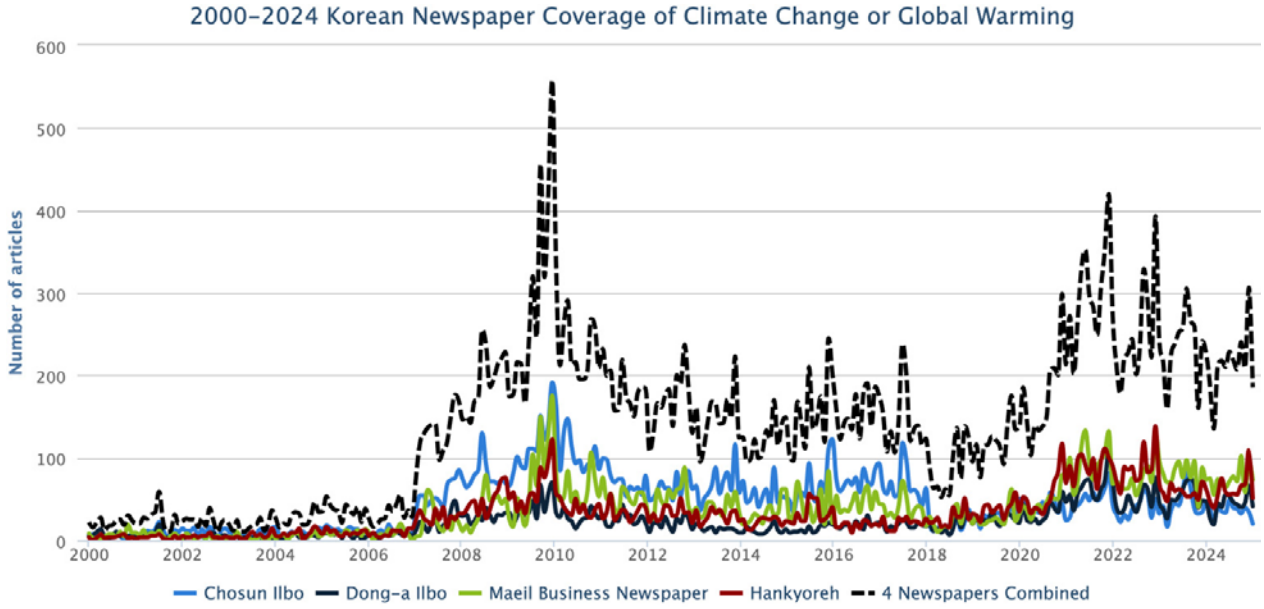

Figure 3. Korean newspapers' – *Chosun Ilbo*, *Dong-a Ilbo*, *Maeil Business Newspaper*, and *Hankyoreh* – coverage of climate change or global warming from January 2000 through December 2024.

almost certain to be the hottest year on record, data shows. It will also be the first to have an average temperature of more than 1.5C above preindustrial levels, marking a further escalation of the climate crisis. Data for November from the EU's Copernicus Climate Change Service (C3S) found the average global surface temperature for the month was 1.62C above the level before the mass burning of fossil fuels drove up global heating. With data for 11 months of 2024 now available, scientists said the average for the year is expected to be 1.60C, exceeding the record set in 2023 of 1.48C. Samantha Burgess, the deputy director of C3S, said: "We can now confirm with virtual certainty that 2024 will be the warmest year on record and the first calendar year above 1.5C. This does not mean that the Paris agreement has been breached, but it does mean ambitious climate action is more urgent than ever." The Paris climate agreement commits the 196 signatories to keeping global heating to below 1.5C in order to limit the impact of climate disasters. But this is measured over a decade or two, not a single year. Nonetheless, the likelihood of keeping below the 1.5C limit even over the longer term appears increasingly remote. The CO2 emissions heating the planet are expected to keep rising in 2024, despite a global pledge made in late 2023 to "transition away from fossil fuels". Fossil fuel emissions must fall by 45% by 2030 to have a chance of limiting heating to 1.5C. The recent Cop29 climate summit failed to reach an agreement on how to push ahead on the transition away from coal, oil and gas. The C3S data showed that November 2024 was the 16th month in a 17-month period for which the average temperature exceeded 1.5C. The supercharging of extreme weather by the climate crisis is already clear, with heatwaves of previously impossible intensity and frequency now striking around the world, along with fiercer storms and worse floods. Particularly intense wildfires blazed in North and South America in 2024, the EU's Copernicus Atmosphere Monitoring Service (Cams) reported last week. The fires, driven by severe droughts, affected the western US, Canada, the Amazon forest and particularly the Pantanal wetlands". As another example elsewhere, Japan's ***Yomiuri Shimbun* reported**, "This year will be the world's warmest since records began, with extraordinarily high temperatures expected to persist into at least the first few months of 2025…The data from the EU's Copernicus Climate Change Service (C3S) comes after U.N. climate talks yielded a $300 billion deal to tackle climate change, a package poorer countries blasted as insufficient to cover the soaring cost of climate-related disasters. C3S said data from January to November had confirmed 2024 is now certain to be the hottest year on record, and the first in which average

global temperatures exceed 1.5 C above the 1850-1900 pre-industrial period. The previous hottest year on record was 2023. Extreme weather has swept around the world in 2024, with severe droughts hitting Italy and South America, fatal floods in Nepal, Sudan and Europe, heatwaves in Mexico, Mali and Saudi Arabia that killed thousands, and disastrous cyclones in the U.S. and the Philippines. Scientific studies have confirmed the fingerprints of human-caused climate change on all of these disasters. Last month ranked as the second-warmest November on record after November 2023".

There were also several stories in the month of December that discussed regional anomalies in weather that were attributed to a changing climate. For instance, there were news accounts about warmth in Spain. For example, ***El País* journalist Victoria Torres Benayas wrote**, "This autumn has been a very warm season and for 14 long years there has not been an autumn with temperatures below normal in Spain. "The trend due to climate change is towards increasingly warmer autumns and many of them become an extension of summer," stressed this Thursday the spokesman for the Aemet, Rubén del Campo, during the presentation of the seasonal balance and the forecast for winter. "The last cold autumn was in 2010 and the rest, except for three normal ones, have all been either warm or very warm or extremely warm," Del Campo said in response to questions from this newspaper. In the heat ranking, the last autumn - in meteorology, this season runs from September 1 to November 30 - occupies the seventh place of the warmest autumns in the series and the sixth of the 21st century. A few days before the end of 2024, this year is the third warmest since records began in Spain, although, worldwide, a new record will be broken. warmer than usual, according to the European Union's Copernicus space observation system. And winter is also likely to be warmer than usual".

> "We can now confirm with virtual certainty that 2024 will be the warmest year on record and the first calendar year above 1.5C. This does not mean that the Paris agreement has been breached, but it does mean ambitious climate action is more urgent than ever."

A wildfire in California this year. Fires driven by severe droughts have affected the western US, Canada, the Amazon forest and particularly the Pantanal wetlands. Photo: David McNew/*Getty Images*.

In mid-December, in the Indian Ocean cyclone Chido imparted devastation on island communities. Its intense strength was attributed in part to climate change, and this then prompted several news accounts. For example, ***Associated Press* correspondent Taiwo Adebayo wrote**, "The Indian Ocean archipelago of Mayotte is reeling from Cyclone Chido, the most intense storm to hit the French territory in 90 years. At least 22 people have been killed since Chido made landfall on Saturday, as high winds swept away entire neighborhoods, damaged major infrastructure and uprooted trees. And while Africa's southeast coast is no stranger to devastating cyclones, climate scientists have warned in recent years that storms in the area are getting more intense and more frequent as a result of human-caused climate change". Meanwhile, **journalists from *Le Monde* reported**, "France will observe a day of national mourning, on Monday, December 23, for the French overseas department of Mayotte, President Emmanuel Macron said, after the department's Indian Ocean archipelago was

devastated by a cyclone, with lacking water and food, and fear of looting gripping residents…A preliminary toll from France's interior ministry shows that 31 people have been confirmed killed, 45 seriously hurt, and more than 1,370 suffering lighter injuries, but officials say that, realistically, a final death toll of hundreds or even thousands is likely. "The tragedy of Mayotte is probably the worst natural disaster in the past several centuries of French history," Prime Minister Francois Bayrou said. In response to widespread shortages, the government issued a decree freezing the prices of consumer goods in the archipelago at their pre-cyclone levels. Cyclone Chido, which hit Mayotte on Saturday, was the latest in a string of storms worldwide fueled by climate change, according to meteorologists".

In December, several stories also drew on primarily ***scientific*** themes when reporting on climate change or global warming. For instance, early in the month at the annual American Geophysical Union meeting, NOAA released its 18th annual **'Arctic Report Card'** which earned media attention around the world as it has done in previous years. For example, US ***National Public Radio*** **journalist Barbara Moran reported**, "Arctic tundra, which has stored carbon for thousands of years, has now become a source of planet-warming pollution. As wildfires increase and hotter temperatures melt long-frozen ground, the region is releasing greenhouse gases into the atmosphere. The finding was reported in the National Oceanic and Atmospheric Administration's annual Arctic Report Card, released Tuesday. The new research, led by scientists from the Woodwell Climate Research Center in Falmouth, Massachusetts, signals a dramatic shift in this Arctic ecosystem, which could have widespread implications for the global climate". Elsewhere, ***The Straits Times*** **noted**, "The Arctic tundra is undergoing a dramatic transformation, driven by frequent wildfires that are turning it into a net source of carbon dioxide emissions after millennia of acting as a carbon sink, the US National Oceanic and Atmospheric Administration (NOAA) said on Dec 10. This drastic shift is detailed in NOAA's 2024 Arctic Report Card, which revealed that annual surface air temperatures in the Arctic in 2024 were the second-warmest on record since

"Arctic tundra, which has stored carbon for thousands of years, has now become a source of planet-warming pollution. As wildfires increase and hotter temperatures melt long-frozen ground, the region is releasing greenhouse gases into the atmosphere. The finding was reported in NOAA's annual Arctic Report Card. The new research signals a dramatic shift in this Arctic ecosystem, which could have widespread implications for the global climate."

The Arctic tundra is warming up and that's causing long-frozen ground to melt as well as an increase in wildfires. Photo: Gerald Frost/*Courtesy of NOAA*.

1900. "Our observations now show that the Arctic tundra, which is experiencing warming and increased wildfire, is now emitting more carbon than it stores, which will worsen climate change impacts," said NOAA administrator Rick Spinrad. Climate warming has dual effects on the Arctic. While it stimulates plant productivity and growth, removing carbon dioxide from the atmosphere, it also leads to increased surface air temperatures that cause permafrost to thaw. When permafrost thaws, carbon trapped in the frozen soil is decomposed by microbes and released into the atmosphere as carbon dioxide and methane – two potent greenhouse gases". As a third example, ***The Jerusalem Post* reported**, "The Arctic tundra is now emitting more carbon dioxide than it absorbs, according to the latest Arctic Report Card released by the US National Oceanic and Atmospheric Administration (NOAA). The annual assessment reveals that warming temperatures and increased wildfires have shifted the Arctic from a carbon sink to a net source of greenhouse gas emissions. "Our observations now show that the Arctic tundra, which is experiencing warming and increased wildfire activity, now emits more carbon than it stores, which will worsen the impacts of climate change," NOAA Administrator Rick Spinrad stated. The report highlights that the period from October 2023 to September 2024 was the second-warmest for the Arctic region since 1900, emphasizing numerous changes affecting both ecosystems and human communities. The thawing permafrost is a significant factor in this shift. When permafrost thaws, carbon that has been stored in the frozen soil is decomposed by microbes, leading to the release of carbon dioxide and methane into the atmosphere. The melting permafrost also activates microbes in the soil, leading to the decomposition of trapped carbon into greenhouse gases, including carbon dioxide and methane".

Also, in December there was attention paid to an article published in the journal *Nature Communication* concluded that CO_2 emissions from tourism were growing twice as fast as those from the rest of the economy. For example, ***La Vanguardia* journalist Rosa M. Tristán noted**, "Yen Sun and her colleagues have already discovered, using data from 175 countries, that tourists' emissions have increased by 3.5% each year between 2009 and 2020. Only 20 countries are responsible for three-quarters of the tourist carbon footprint. Overall, the 5.4 gigatons of CO2 generated annually by travel are equivalent to everything emitted by Latin America and the Caribbean in that period".

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Scientists propose reducing long-distance flights to curb the climate impact of tourism. Photo: Marta Pérez/*EFE*.

As a third illustration along scientific-themed climate change media portrayals, a new ***International Energy Agency* report** found that global coal demand is set to rise to a new record this year and remain steady through 2027 while China, India, and countries in Southeast Asia are projected to account for 75% of global coal demand in 2024. For example, ***CBS News***

reported, "World coal use is set to reach an all-time high in 2024, the International Energy Agency said Wednesday, in a year all but certain to be the hottest in recorded history. Despite calls to halt humanity's burning of the filthiest fossil fuel driving climate change, the energy watchdog expects global demand for coal to hit record highs for the third year in a row. Scientists have warned that planet-warming greenhouse gases will have to be drastically slashed to limit global heating to avoid catastrophic impacts on the Earth and humanity…Published on Wednesday, the IEA's "Coal 2024" report does, however, predict the world will hit peak coal use in 2027 after topping 8.77 billion tons this year. But that would be dependent on China, which for the past quarter-century has consumed 30 percent more coal than the rest of the world's countries combined, the IEA said. China's demand for electricity was the most significant driving force behind the increase, with more than a third of coal burnt worldwide carbonized in that country's power plants. Though Beijing has sought to diversify its electricity sources, including a massive expansion of solar and wind power, the IEA said China's coal demand in 2024 will still hit 4.9 billion tones – itself another record. Increasing coal demand in China, as well as in emerging economies such as India and Indonesia, made up for a continued decline in advanced economies. However that decline has slowed in the European Union and the United States. Coal use there is set to decline by 12 and five percent respectively, compared with 23 and 17 percent in 2023. With the imminent return to the White House of Donald Trump – who has repeatedly called climate change a "hoax" – many scientists fear that a second Trump presidency would water down the climate commitments of the world's largest economy. Coal mining also hit unprecedented levels by topping nine billion tons in output for the first time, the IEA said, with top producers China, India and Indonesia all posting new production records. The energy watchdog warned that the explosion in power-hungry data centers powering the emergence of artificial intelligence was likewise likely to drive up demand for power generation, with that trend underpinning electricity demand in coal-guzzling China. The 2024 report reverses the IEA's prediction last year that coal use would begin declining after peaking in 2023. At the annual U.N. climate change forum in Dubai last year, nations vowed to transition away from fossil fuels".

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Aerial view of a coal-fired power plant near Ohio. Photo: *Shutterstock*.

A final brief science-themed example in December is a ***Nature Communications* study** that found the Arctic's first ice-free day is likely to come before 2030 earned media attention. For example, ***Indian Express* journalist Alind Chauhan reported**, "the Arctic Ocean may see its first ice-free day – when its waters have less than one million square kilometres of sea ice – by 2030, or sooner than previously expected, according to a new study. The scenario is unlikely to happen but it is possible, and its plausibility is increasing as humans continue to emit heat-trapping greenhouse gases (GHGs) at unprecedented levels, the analysis said".

Next, ***cultural*-themed** stories relating to climate change or global warming also cropped up in December, as it has done in previous months and years. To illustration, in the US a Montana Supreme Court decision about a constitutional right to a clean environment (including mentions of climate change) in favor of youth climate activists generated media attention. For example, ***Associated Press* correspondent Amy Beth Hansen reported**, "Montana's Supreme Court on Wednesday upheld a landmark climate ruling that said the state was violating residents' constitutional right to a clean environment by permitting oil, gas and coal projects without regard for global warming. The justices, in a 6-1 ruling, rejected the state's argument that greenhouse gases released from Montana fossil fuel projects are minuscule on a global scale and reducing them would have no effect on climate change, likening it to asking: "If everyone else jumped off a bridge, would you do it too?" The plaintiffs can enforce their environmental rights "without requiring everyone else to stop jumping off bridges or adding fuel to the fire," Chief Justice Mike McGrath wrote for the majority. "Otherwise the right to a clean and healthful environment is meaningless." Only a few other states, including Hawaii, Illinois, Pennsylvania, Massachusetts and New York, have similar environmental protections enshrined in their constitutions. The lawsuit filed in 2020 by 16 Montanans –who are now ages 7 to 23 – was considered a breakthrough in attempts by young environmentalists and their attorneys to use the courts to leverage action on climate change". Meanwhile, ***Washington Post* journalist Anna Phillips wrote**, "Montana's permitting of oil, gas and coal projects without consideration for climate change violates residents' constitutional

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Youth plaintiffs in the Held v. Montana climate case leave the Montana Supreme Court. Photo: Thom Bridge/*Independent Record/AP*.

right to a clean environment, the state's Supreme Court ruled Wednesday, upholding a landmark ruling in a case brought by youth activists. The 6-1 ruling is a major, and rare, victory for climate activists, who have tried to use the courts to force action on government and corporate policies and activities they say are harming the planet. In their decision, the Montana justices affirmed an August 2023 ruling by a state judge, who found in favor of young people alleging the state violated their right to a "clean and healthful environment" by promoting the use of fossil fuels. Melissa Hornbein, a senior attorney with the Western Environmental Law Center, which served as co-counsel for the plaintiffs along with Our Children's Trust, said the decision would force Montana state agencies to assess the greenhouse gas emissions and climate impacts of all future fossil fuel projects when deciding whether to approve or renew them".

"Onshore wind is one of the cheapest forms of clean energy. But there has been a 94% decline in projects in England since 2015 when the previous Conservative government tightened planning regulations for wind farms - following pushback from local communities over potential environmental damage. Subsequently, only a small number of local objections would be enough to effectively block new projects."

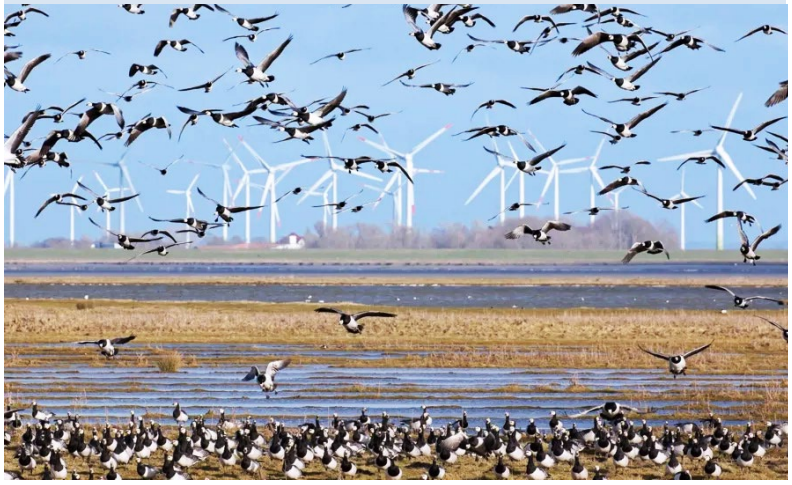

Photo: *Getty Images*.

Finally, many enduring ***political*** and ***economic***-themed media stories about climate change or global warming dominated various outlets in December. For example, UK climate policy action plans – and their execution to date – earned attention. For example, ***BBC* journalist Esme Stollard reported**, "The government has unveiled plans to give ministers the final say on approving large onshore wind farms rather than leaving decisions to local councils, where opposition has often been fierce. The plan is among proposals announced by Energy Secretary Ed Miliband on Friday as part of what the government is calling an "ambitious" action plan for reaching 95% clean energy in the UK by 2030. Miliband also wants to give powers to the energy regulator to prioritise projects in the queue waiting to link up with the National Grid… Onshore wind is one of the cheapest forms of clean energy. But there has been a 94% decline in projects in England since 2015 when the previous Conservative government tightened planning regulations for wind farms - following pushback from local communities over potential environmental damage. Subsequently, only a small number of local objections would be enough to effectively block new projects. Following Labour's general election victory, planning rules for onshore wind were eased in September 2024. But renewable energy groups said they did not go far enough. The public will still be consulted on new wind farms, but the secretary of state will be empowered to take any final decision -based on national priorities such as tackling climate change. Mr Miliband told the BBC's Today programme on Friday: "There are difficult tradeoffs here and unless we change the way we do things we are going

to be left exposed as a country. "In the end it will be a national decision." The government maintains any project will need to have "direct community benefits" and proposes to establish a recovery fund to invest in nature projects as compensation for any environmental damage".

Similarly, US climate policy action plans generated news in December. This was sparked by the outgoing Biden Administration's announcement to strengthen the old US goal to reduce greenhouse gas (GHG) emissions by 50% to 52% (compared to 2005 levels) by 2030 to a new goal to cut GHG emissions across the economy by 61% to 66% by 2035 while curbing methane by 35%, and reaching 'net zero' GHG emissions by 2050. For example, ***New York Times* journalists Brad Plumer and Lisa Friedman reported**, "President Biden on Thursday announced an aggressive new climate goal for the United States, saying that the country should seek to slash its greenhouse gas emissions by at least 61 percent below 2005 levels by 2035. The target is not binding and will almost certainly be disregarded by President-elect Donald J. Trump, who has called global warming a "scam." But Biden administration officials said they hoped it would encourage state and local governments to continue to cut the emissions that are rapidly heating the planet, even if the federal government pulls back. The announcement caps four years of climate policies from a president who has sought to make global warming a signature focus of his administration. In a video address from the White House, Mr. Biden said his efforts, including pumping billions of dollars into clean energy technologies and regulating pollution from power plants and automobiles, amounted to "the boldest climate agenda in American history." Mr. Biden said he expected progress in tackling climate change to continue after he had left office. "American industry will keep inventing and keep investing," he said. "State, local, and tribal governments will keep stepping up. And together, we will turn this existential threat into a once-in-a-generation opportunity to transform our nation for generations to come." The new pledge of cutting emissions 61 to 66 percent below 2005 levels by 2035 is a significant update of commitments that

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The Naughton coal-fired power plant in Kemmerer, Wyoming. Photo: Kim Raff/*The New York Times*.

the United States had already made. In 2021, Mr. Biden promised that the country would cut its heat-trapping emissions at least 50 percent below 2005 levels by 2030. Scientists have said that global emissions must drop by roughly half this decade to keep global warming at relatively low levels. But while U.S. emissions have been trending downward, the country is not currently on pace to meet even the earlier goal. Last year, emissions were about 17 percent below 2005 levels, largely because electric utilities have retired many of their coal plants in favor of cheaper and cleaner gas, wind and solar power. But this year, emissions are expected to stay roughly flat, in part because rising electricity demand has led power companies to burn record amounts of gas, offsetting growth in renewable energy. Under the 2015 Paris climate agreement, every country agreed to submit a plan for curbing its greenhouse gas emissions, with the details left up to individual governments.

Those pledges then get updated every five years. According to the Paris pact, countries are expected to issue a new round of plans before the next United Nations climate summit, scheduled for November in Belém, Brazil".

At the international level, interlinked United Nations (UN) desertification talks ended without an agreement. This generated news attention. For example, ***Associated Press* reporter Sibi Arasu noted**, "Despite two weeks of U.N.-sponsored talks in Saudi Arabia's Riyadh, the participating 197 nations failed to agree early Saturday on a plan to deal with global droughts, made longer and more severe by a warming climate. The biennial talks, known as COP 16 and organized by a UN body that deals with combating desertification and droughts, attempted to create strong global mandates to legally bind and require nations to fund early warning systems and build resilient infrastructure in poorer countries, particularly Africa, which is worst affected by the changes. The United Nations Convention to Combat Desertification released a report earlier this week warning that if global warming trends continue, nearly five billion people – including in most of Europe, parts of the western U.S., Brazil, eastern Asia and central Africa – will be affected by the drying of Earth's lands by the end of the century, up from a quarter of the world's population today. The report also said farming was particularly at risk, which can lead to food insecurity for communities worldwide. This is the fourth time UN talks aimed at getting countries to agree to make more headway on tackling biodiversity loss, climate change and plastic pollution have either failed to reach a consensus or delivered disappointing results this year, worrying many nations, particularly the most vulnerable".

Then at the global level, climate policy decisions at the World Court generated news coverage in December. For example, ***Associated Press* correspondent Molly Quell reported**, "The top United Nations court will take up the largest case in its history on Monday, when it opens two weeks of hearings into what countries worldwide are legally required to do to combat climate change and help vulnerable nations fight its devastating impact. After years of lobbying by island nations who fear they could simply disappear under rising sea waters, the U.N. General Assembly asked the International Court of Justice last year for an opinion on "the obligations of States in respect of climate change." "We want the court to confirm that the conduct that has wrecked the climate is unlawful," Margaretha Wewerinke-Singh, who is leading the legal team for the Pacific island nation of Vanuatu, told The Associated Press. In the decade up to 2023, sea levels have risen by a global average of around

"In the decade up to 2023, sea levels have risen by a global average of around 4.3 centimeters (1.7 inches), with parts of the Pacific rising higher still. The world has also warmed 1.3 degrees Celsius (2.3 Fahrenheit) since pre-industrial times because of the burning of fossil fuels. Vanuatu is one of a group of small states pushing for international legal intervention in the climate crisis."

Vanuatu Prime Minister Charlot Salwai Tabimasmas addresses the 79th session of the United Nations General Assembly. Photo: Richard Drew/*AP*.

Figure 4. Examples of newspaper front pages with climate change stories in December 2024.

4.3 centimeters (1.7 inches), with parts of the Pacific rising higher still. The world has also warmed 1.3 degrees Celsius (2.3 Fahrenheit) since pre-industrial times because of the burning of fossil fuels. Vanuatu is one of a group of small states pushing for international legal intervention in the climate crisis". Elsewhere, **reporting in *The Hindu* noted**, "France on Thursday urged the United Nations top court to "clarify" international law relating to the fight against climate change, saying judges had a "unique opportunity" to provide a clear legal framework. The International Court of Justice is holding historic hearings to craft a so-called "advisory opinion" on states' responsibilities to fight climate change and the consequences for those damaging the environment". As a final example, ***El Mundo* journalist Carlos Fresneda wrote**, "The International Criminal Court heard testimony from 98 countries and a dozen organizations over two weeks. The high court will issue an "advisory opinion" on the responsibility of developed countries in 2025 that is expected to serve as the basis for future international legal disputes. "Climate change is not a distant threat, but a real and present danger that is affecting our lives, and is putting the existence of our own countries at risk," said Vishal Prasad, director of the group Pacific Islands Students Fighting Climate Change (PISFCC), which promoted the unprecedented initiative before the ICC".

And many news accounts – from opinion pieces to straight news reporting – swirled with speculation about the politics of climate change to come in 2025. For example, ***Hindustan Times* columnist Gopalkrishna Gandhi commented**, "The year 2024 scorched and scalded but just about let the planet survive. Let us hope that the new year, despite portents of war and worsening of the climate crisis, proves different. Let us accept it. The sun sank last evening, disappointed. Disappointed in us, earthlings. In the way we are treating the earth and each other. Hoping against hope about the future of Planet Earth…"

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2024

A REVIEW OF MEDIA COVERAGE OF CLIMATE CHANGE AND GLOBAL WARMING

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