Media and Climate Change Observatory (MeCCO)

SPECIAL ISSUE, 2017 RECAP

2017

saw media attention to climate change and global warming ebb and flow. At the global level, June of this year was the high water mark for coverage of climate change or global warming in the fifty-two sources across twenty-eight countries tracked by our Media and Climate Change Observatory (MeCCO) team. Figure 1 shows media

coverage of climate change or global warming month to month – organized into seven geographical regions around the world – from January through December 2017. This trend of highest levels of coverage in June was also the case at the national level in Australia, Canada, India, Spain and the United Kingdom (UK) in 2017. This increase was largely attributed to news surrounding United States (US) President Donald J. Trump's withdrawal from the 2015 United Nations (UN) Paris Climate Agreement, with continuing media attention paid to the emergent US isolation following through the G7 summit a few weeks later.

2017 World Newspaper Coverage of Climate Change or Global Warming

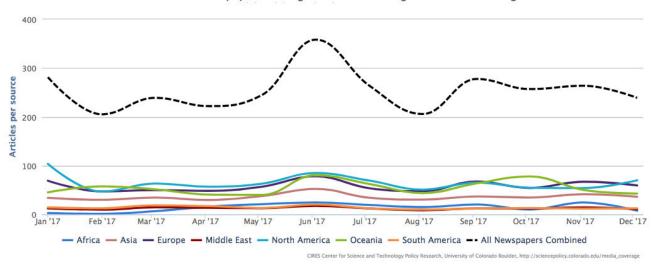


Figure 1: Media coverage of climate change or global warming in fifty-two sources across twenty-eight countries in seven different regions around the world, from January through December 2017.

However, coverage of climate change or global warming across *The Washington Post*, *The Wall Street Journal*, *The New York Times*, *USA Today*, and the *Los Angeles Times* in the US was at its highest level for the year in January. Figure 2 illustrates these trends month to month in US press accounts in these five publications in 2017. The inauguration of US President Trump on January 20th along with great anticipation (punctuated by a heavy dose of dread) regarding a new phase of approaches to science and the environment by the incoming administration generated numerous stories on political and policy dimensions of climate change.





2017 United States Newspaper Coverage of Climate Change or Global Warming

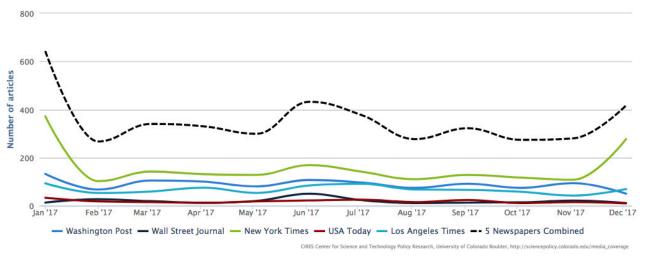


Figure 2: Media coverage of climate change or global warming month to month in the *Los Angeles Times, The New York Times, USA Today, The Washington Post*, and *The Wall Street Journal* in the US from January through December 2017.

The prominence of news on climate change or global warming associated with Donald J. Trump in 2017 has been referred to as a 'Trump Dump'. This is defined as a phenomena where media attention that would have focused on other climate-related events and issues instead was placed on Trumprelated actions, leaving many other stories untold.

This Trump Dump was illustrated most recently as the year 2017 came to an end, through media responses to the December 28 tweet from the President that referred to a cold snap in the Eastern half of the United States (approx. 1% of the Earth's surface) to cheekily call into question investments and action to confront climate change (see Figure 3 for the tweet). This goading on social media garnered reports and responses in a number of sources. For examples, journalist Kendra Pierre-Louis from *The New York Times* reported that President Trump "appeared unaware of the distinction between weather and climate" in an article entitled 'It's Cold Outside. Cue the Trump Global Warming Tweet'. Meanwhile, reporter Dino Grandoni from *The Washington Post* pointed out, "Before sending that message, Trump had not sent any tweet containing the phrase "climate change" or "global warming" since becoming president...In contrast, two years ago during the chilly winter of 2015, Trump sent off at least nine tweets holding up cold temperatures as evidence that global warming can't be happening."²

https://www.washingtonpost.com/news/energy-environment/wp/2017/12/28/after-chilly-forecast-trump-tweets-u-scould-use-a-little-bit-of-that-good-old-global-warming/?utm_term=.b09233b2b57e





¹ https://www.nytimes.com/2017/12/28/climate/trump-tweet-global-warming.html? r=0



Figure 3: US President Donald J. Trump tweet from December 28, 2017 to close out the year.

Throughout the year 2017, in terms of the frequency of words in articles in the US, 'Trump' was invoked 19,184 times through 4117 stories in *The Washington Post*, *The Wall Street Journal*, *The New York Times*, *USA Today*, and the *Los Angeles Times* in 2017 (a ratio of nearly 4.7 times per article on average). Figure 4 depicts word frequencies in US press accounts across the calendar year 2017.



Figure 4: This word cloud shows the frequency of words (4 letters or more) invoked in media coverage of climate change or global warming in in the *Los Angeles Times, The New York Times, USA Today, The Washington Post*, and *The Wall Street Journal* in the US in 2017.









This report is an aggregation of monthly summaries that our MeCCO team has compiled and posted each month on our website.³ The project is a part of the Center for Science and Technology Policy Research (CSTPR) in the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado Boulder. Initial funding for this project (six months) was received from the Office for Outreach and Engagement at the University of Colorado Boulder and continues with support from CSTPR.

Media stories on climate change or global warming typically manifest through primary yet often intersecting *political*, *scientific*, *cultural* and *ecological/meteorological* themes. The month-to-month summaries that follow generally then highlight key events, stories and developments through these dimensions.

As 2018 begins, it is a time for important reflection on how the past year 2017 shapes the one to come and those that follow. Reverend Martin Luther King, Jr. once said, "We are now faced with the fact that tomorrow is today. We are confronted with the fierce urgency of now." May this report provide a useful resource to help confront climate change in 2018 and beyond.

anuary ushered in a new era for many things, including media attention to climate change. As many around the world braced for a new phase of approaches to science and the environment by the US Trump administration - who took up power on January 20th – stories focused largely on political and policy dimensions of climate change in this first month of 2017. Coverage of climate change and global warming increased most prominently in the US in January, with stories up 13% from December 2016, and 117% from the previous January. Numbers across all sources monitored by MeCCO showed a 2% increase from December 2016 overall. A larger majority of stories appearing in US media and around the world surrounded the election of Donald J. Trump in November 2016. Reverberations throughout the country and around the world kicked up coverage. Examples included stories on Trump's first Executive Orders re-initiating Dakota Access and Keystone XL pipeline projects, and articles on how funding would be curtailed in key federal agencies. Actions, and threats like these, sparked media attention.

To illustrate, Ian Austen and Clifford Krauss from *The New York Times* reported how for Canadian Prime Minister Justin Trudeau, Trump's "revival of Keystone XL upsets a balancing act" Stephen Mufson and Brady Dennis at *The Washington Post* reported on how the White House website's energy pages, which went up within moments of Trump's inauguration, removed references to combating climate change, a topic that had been featured prominently on the site under President Barack Obama. ⁵

⁵ https://www.washingtonpost.com/news/energy-environment/wp/2017/01/20/on-white-house-website-obama-climate-priorities-vanish/?utm_term=.180aca85a6ee

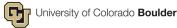




³ The website can be accessed here http://sciencepolicy.colorado.edu/icecaps/research/media coverage/index.html

⁴ https://www.nytimes.com/2017/01/25/world/canada/canada-justin-trudeau-keystone-xl.html





Betsy McKay from *The Wall Street Journal* reported that Centers for Disease Control and Prevention said it recently postponed a gathering it had planned to hold in February 2017 on the effects of climate change on health, ⁶ and Coral Davenport from *The New York Times* reported on orders of a freeze on federal grant spending at the Environmental Protection Agency (EPA), Departments of the Interior, Agriculture and Health and Human Services as well as other government agencies ⁷.

Stories in January 2017 also focused on Trump nominations for key posts in the administration – particularly for Secretary of State (former ExxonMobil CEO Rex Tillerson), EPA Administrator (Oklahoma Attorney General Scott Pruitt), Secretary of the Department of Interior (Montana Congressman Ryan Zinke) and Secretary of the Department of Energy (former Texas Governor Rick Perry) – focusing mainly on worrisome dimensions of these appointments for those who care about climate and environmental protection, justice and human well-being among other things. Moreover, some media pieces also addressed cultural dimensions regarding how climate concerns were voiced in Women's marches across the world on January 21st, and (mainly in US coverage) how 'alt' Twitter accounts cropped up from US National Park Services and other US agency spin-offs to communicate #climatefacts and dismay about Trump Administration plans for shifts in science, environment and climate policy engagements.

So as Barack Obama and his administration vacated the White House, media attention was paid to Donald Trump's and his aides' promises for swift and aggressive action to dismantle and block Obama's climate-related policies and actions, such as incorporating the social cost of carbon to project planning and Clean Power plan regulations. Media treatments also covered how Trump administration behaviors served to embolden Republican legislative officials in the House of Representatives and in the Senate, where the elimination of regulations on coal mining near streams and disposal of rules to reduce methane emissions were said to be prioritized in the next Congressional sessions. On January 4, Chelsea Harvey from *The Washington Post* wrote "As a new Congress convenes this week, regulatory reform is the rage, and the upshot seems to be that at least a few of President Obama's environmental regulations could be dismantled quickly by the Republican Congress, with President-elect Donald Trump's approval". 8

And a number of stories in January 2017 discussed how this destabilizing new stance on climate change in the US Trump administration would influence other key nations such as China and India, and how it would impact the implementation of the Paris Climate Accord (signed in December 2015 and entered into force in November 2016). For example, Alice Wu from the *South China Morning Post* said in an opinion piece, "The American retreat from the world will have irrevocable consequences. Within minutes of taking office, Trump's White House had removed minority initiatives and the threat of

https://www.washingtonpost.com/news/energy-environment/wp/2017/01/04/republicans-can-tear-up-a-few-obama-environment-rules-but-theyll-have-to-choose-carefully/?utm_term=.0e2496acf972





⁶ https://www.wsj.com/articles/cdc-postpones-meeting-on-climate-change-and-health-1485211145

⁷ https://www.nytimes.com/2017/01/25/us/politics/some-agencies-told-to-halt-communications-as-trump-administration-moves-in.html





climate change from its website. President Xi Jinping had already made clear at Davos that China is ready to step up as the US relinquishes its global leadership roles in globalization and fighting climate change."⁹

But January 2017 media attention to climate change and global warming wasn't merely focused on politics and policy. News about the science of climate change emerged mid-month focused on continued temperature increases in the US and around the world, with 2016 data just in. For example, on January 10th, Doyle Rice at *USA Today* covered the announcement by the National Oceanic and Atmospheric Administration (NOAA) that 2016 was the second-warmest year on record in the US data. ¹⁰ As a second example, on January 18th, Damian Carrington at *The Guardian* covered the announcement of global data from the UK Meteorological Office, National Aeronautics and Space Administration (NASA) and NOAA, noting that this set a new high for a third year in a row "with scientists firmly putting the blame on human activities that drive climate change". ¹¹

Together, January animated the emerging adage that 'not all news is good news for climate change'.

ebruary saw climate change coverage decrease across the MeCCO-monitored sources on planet Earth. Coverage of *political*, *scientific*, *ecological/meteorological*, and *cultural* dimensions of climate change issues dropped 26% globally from the previous month and 23% from the previous February (2016). Compared to January 2017, this decrease was most pronounced in North America with a 55% dip. While the content of coverage in Australia, New Zealand, the UK, the US and around the world continued to place a steady focus on movements of the newly anointed Donald J. Trump Administration in the US, media attention focused more frequently on a range of other political, social and economic threats and issues during the month of February. Trump Administration movements did not contribute to a bump in coverage overall in February; instead, it was more of a Trump Dump.

Within dominant *political* themes, cabinet appointments and US Senate confirmation hearings dotted the February climate change coverage landscape. In particular, the mid-February 52-46 Senate confirmation of former Oklahoma Attorney General Scott Pruitt to lead the EPA kicked up a number of stories highlighting the controversy behind putting a "seasoned legal opponent of the agency" in charge. Stories also connected to *cultural* themes, covering protests of Pruitt's nomination from current and former EPA employees, and from scientists at the American Association for the Advancement of Science (AAAS) annual meeting leading up to the confirmation hearing. ¹³

http://www.latimes.com/nation/ct-trump-epa-protest-chicago-20170206-story.html





⁹ http://www.scmp.com/comment/insight-opinion/article/2066011/insular-trumps-first-days-show-he-has-already-turned

http://www.usatoday.com/story/weather/2017/01/09/2016-usas-second-warmest-year-record/96355508/ https://www.theguardian.com/environment/2017/jan/18/2016-hottest-year-ever-recorded-and-scientists-say-human-

¹¹ https://www.theguardian.com/environment/2017/jan/18/2016-hottest-year-ever-recorded-and-scientists-say-human-activity-to-blame

https://www.nytimes.com/2017/02/17/us/politics/scott-pruitt-environmental-protection-agency.html





At the *political* and *scientific* interface, stories across India. Thailand and Japan in particular focused on carbon tax and new technologies to save energy. For example, a story from the Bangkok Post focused on how a country-wide regulatory shift in new air conditioning technology standards "could reduce the country's power consumption by 10%". 14 Around the world, coverage also focused on US-based Trump Administration plans to weaken federal environmental regulations of many sorts. For instances, Hiroko Tabuchi from *The New York Times* wrote about Republican efforts to dismantle rules that block surface coal mining near US streams¹⁵ and Oliver Milman from *The Guardian* reported on efforts to target regulations that restrict drilling in US national parks and curb the release of methane. ¹⁶ And Juliet Eilperin and Brady Dennis from *The Washington Post* wrote about Trump administration symbolic and material efforts to move forward on pipeline projects, in particular the Dakota Access Pipeline.¹⁷

In ecological/meteorological news, stories about heatwaves, fire danger, floods and high temperatures popped up throughout the month around the world. Eryk Bagshaw, Megan Levy and Peter Hannam from *The Sydney Morning Herald* reported on a heat wave and extreme fire danger, with temperatures reaching 116°F (47°C) in parts of New South Wales, 18 while Joseph Serna and Bettina Boxall from the Los Angeles Times described "epic rain and snow" in California in the month of February. 19 Meanwhile, stories from *The Nation* in Pakistan (by Azal Zahir)²⁰ and in *The Times of India* (by Harveer Dabas)²¹ connected threats to megafauna and flora due to rising temperatures and other climate-related pressures, hooked to high temperatures across Asia in February. And news from warming at the poles garnered media attention as well. For examples, Doyle Rice from USA Today covered new data from Antarctica revealing a new record high temperature on the continent, ²² and Robin McKie from *The Observer* reported on high Arctic temperatures and new data from the Boulderbased National Snow and Ice Data Center (NSIDC) showing record low ice extent in the region.²³

²³ https://www.theguardian.com/world/2017/feb/12/plan-to-refreeze-arctic-before-ice-goes-for-good-climate-change





¹⁴ http://www.bangkokpost.com/news/general/1206261/new-air-con-coolants-save-on-power-use

¹⁵ https://www.nvtimes.com/2017/02/02/business/energy-environment/senate-coal-regulations.html? r=0

https://www.theguardian.com/us-news/2017/feb/01/environment-republicans-congress-climate-methane-parks

¹⁷ https://www.washingtonpost.com/news/energy-environment/wp/2017/02/07/trump-administration-to-approve-finalpermit-for-dakota-access-pipeline/?utm term=.aa5de6e21a1d

http://www.smh.com.au/environment/nsw-heatwave-unprecedented-fire-conditions-are-as-bad-as-it-gets-20170211guarjl.html

http://www.latimes.com/local/lanow/la-me-In-drought-emergency-regulations-20170208-story.html

http://nation.com.pk/columns/27-Feb-2017/winged-sentinels

http://timesofindia.indiatimes.com/home/environment/flora-fauna/migratory-birds-prepare-for-early-return-astemperatures-soar/articleshow/57352356.cms

http://www.usatoday.com/story/weather/2017/03/01/antarctica-new-record-high-temperature/98538084/





arch numbers reflected fifty-two sources in twenty-eight countries, as monitoring began of the German media outlets *Süddeutsche Zeitung* and *Die Tageszeitung*. ²⁴ MeCCO counts showed a 13% increase from February 2017 overall. Coverage of *political*, *scientific*, *ecological/meteorological*, and *cultural* dimensions of climate change issues increased most prominently in the US, up 35% from February 2017, and a 60% increase from March in the previous year. Sources in the Middle East covered climate change topics, up 48% compared to the previous month of February. Climate coverage in South America also increased across all sources by 47% from February 2017. African coverage increased as well from February but was still down 13% from the previous March.

As for *political themes*, US and some UK sources continue to focus on US President Donald J. Trump and his climate politics. Clearly, Trump's executive order promoting energy independence and economic growth mainly through reduced regulatory constraints on coal production spurred some of the coverage, but it was preceded in Australia and other places too in March.²⁵ Another topic largely covered discusses EPA budget cuts alongside Pruitt's statements about the allegedly negligible role of CO2 in climate change. ²⁶ Also, emergent in March were a number of discussions across sources about the future of coal in the context of economics of energy and effects on climate change. For example, besides articles on Trump's climate policies in German and US newspapers, China's promises to stick to the Paris Climate Agreements has popped up in several sources throughout March. In German newspapers in particular, climate coverage went up relating to Trump's plans to dismantle former US President Barack Obama's Climate Action Plan. German newspaper coverage portrayed opposition to Trump's support of coal as a pathway to job creation and decreased unemployment.

Stories connected to *cultural* themes populated articles on Earth Hour 2017.²⁷ The WWF, for example, announced that 2017 has been the biggest Earth Hour event so far with 7000 cities and 184 countries participating in switching off the light for one hour on March 25 to set an example for climate protection. In *ecological/meteorological* news, stories about the death of coral reefs due to ocean acidification and warming, and unusual high temperatures and rapid ice melt in the Arctic, were published throughout the month of March around the world. For example, a photo exhibition from James Balog tracks the worldwide melting of glaciers and shows results of his work on display at

http://newsinfo.inquirer.net/883866/more-cebuanos-switch-off-lights-for-earth-hour-2017





²⁴ These new counts of climate change ("Klimawandel") or global warming ("Globale Erwärmung") are from two German newspapers (Süddeutsche Zeitung and Die Tageszeitung) from January 2004 through the present. Figures are at http://sciencepolicy.colorado.edu/icecaps/research/media_coverage/germany/index.html

²⁵ http://www.atimes.com/article/carbon-friendly-turnbull-turns-coal

https://www.theguardian.com/environment/2017/mar/09/epa-scott-pruitt-carbon-dioxide-global-warming-climate-change





Chicago's Museum of Science and Industry showing that "more than 90 percent of the world's glaciers are melting". ²⁸

pril coverage of climate change or global warming across all sources in twenty-eight countries showed an approximate 7% decrease compared to March 2017. Coverage of political, scientific, ecological/meteorological, and cultural dimensions of climate change decreased most prominently in Oceania, which saw more than a 20% decrease compared to March 2017. Asia, Europe, the Middle East, North America and South America all saw modest decreases in coverage, while Africa (140%) was the only region to increase its coverage of climate change compared to March 2017. Overall, coverage across all sources in twenty-eight countries decreased approximately 25% compared to April 2016.

Despite an overall decrease in coverage, *political* themes in April 2017 focused on the Trump Administration's dispositions towards the Paris Climate Agreement. Coral Davenport of *The New York Times* reported that Mr. Trump intends to make a decision before the Group of Seven (G7) meeting in May 2017 on whether or not the US will follow through with its commitments under the Paris Agreement. ²⁹ Coral Davenport suggested that Mr. Trump's policy advisors are urging him to keep the US committed, while Chris Mooney and Brady Dennis at *The Washington Post* reported on US EPA Administrator Scott Pruitt's recent comments suggesting the US should withdraw from the Paris Climate Agreement. ³⁰ Both articles highlighted the uncertainty surrounding the US President's forthcoming decision and the conflicting advice coming from different parties within the Administration.

Coverage of *scientific* and *ecological* dimensions of climate change in April 2017 centered on a number of new and recurrent reports of environmental degradation attributed to global climate change. As examples, several articles highlighted the recent and drastic changes to the Slims River in Northern Canada, which lost its water source to another nearby river during a period of intense melting affecting one of Canada's largest glaciers. Jeremy Hance of *The Guardian* also summarized three recent academic studies that describe and document the negative impacts of climate change on Earth's ecological processes and living organisms.

https://www.theguardian.com/environment/radical-conservation/2017/apr/05/climate-change-life-wildlife-animals-biodiversity-ecosystems-genetics





²⁸ http://news.mb.com.ph/2017/03/25/photographer-captures-worlds-glacier-melt-over-decade/

https://www.nytimes.com/2017/04/18/us/politics/trump-advisers-paris-climate-accord.html

 $[\]frac{30}{\text{https://www.washingtonpost.com/news/energy-environment/wp/2017/04/14/trumps-epa-chief-scott-pruitt-calls-for-an-exit-to-the-paris-climate-agreement/?utm_term=.7d23570578df}$

³¹ https://www.theguardian.com/commentisfree/2017/apr/21/rivers-vanishing-thin-air-climate-crisis

https://www.nytimes.com/2017/04/17/science/climate-change-glacier-yukon-river.html?_r=0





Spanning the boundaries of *cultural*, *scientific*, and *political* dimensions of climate change, both the 'March for Science' and the 'People's Climate March' garnered significant coverage in April 2017. The 'March for Science' included a large demonstration in Washington D.C., but similar protests took place in hundreds of cities across the US and around the world. The Bangkok Post reported that Australia, New Zealand, and Germany also saw large turnouts as part of the 'March for Science'. Another article in *The Hindu* by D. Balasubramanian described the important role of science and technology in India's continued development and called for similar marches in India to support rational, evidence-based decision making.

Coverage also focused on the 'People's Climate March', which took place April 29th, 2017. While the 'People's Climate March' differed in topics, strategies and scope compared to the 'March for Science', there was some undeniable overlap between the two events.³⁶ Nonetheless, each event garnered significant coverage in April 2017 that further underscored the dimensional intersections of science, culture and politics.

ay coverage of climate change and global warming increased compared to the previous month of April, as overall coverage across all sources in twenty-eight countries showed an approximate 10% increase compared to April 2017. Coverage of political, scientific, ecological/meteorological, and cultural dimensions of climate change increased most prominently in Africa and Asia, which saw 31% and 28% increases in coverage, respectively. Overall, coverage across all sources in twenty-eight countries decreased approximately 43%

compared to May 2016.

With an overall increase in coverage, *political* themes in May 2017 continued to focus on the US' involvement with the Paris Climate Agreement. The *Hindustan Times* reported on the uncertainty surrounding the Trump Administration's decision on whether or not to withdraw from the Paris Agreement and cited the G7 meeting in Italy as a key date in the overall decision process. Another article in the *Manila Bulletin* considered the impacts of a US withdrawal from the Paris Agreement and described the mounting pressure on the Trump Administration from international leaders to stay the course. Other political coverage focused on the response of international leaders to a US abdication. Indrani Bagchi of *The Times of India* reported on a renewed partnership between Germany and India,

³⁸ http://news.mb.com.ph/2017/05/27/what-happens-to-earth-if-the-us-exits-the-climate-deal/





³⁴ https://www.nytimes.com/2017/04/22/science/march-for-science.html

http://www.bangkokpost.com/news/general/1236594/scientists-speak-out-worldwide

https://www.washingtonpost.com/national/health-science/climate-march-expected-to-draw-massive-crowd-to-dc-in-sweltering-heat/2017/04/28/1bdf5e66-2c3a-11e7-b605-33413c691853 story.html?utm term=.4f9f2bd1fe46

³⁷ http://www.hindustantimes.com/business-news/trump-delaying-decision-on-paris-climate-deal-no-clarityahead-of-g7-summit/story-JSahbjxCfcP6HA5ehoBnSL.html





which has helped to reaffirm each countries' commitment to emissions reductions under the Paris Agreement in the face of a US withdrawal.³⁹

Coverage of *scientific* and *ecological* dimensions of climate change in May 2017 centered on a number of new reports on carbon emissions. Henry Fountain at *The New York Times* summarized a recent academic study that details drastic changes to the carbon cycle in Arctic and near-Arctic regions due to a warming climate. The new study suggests that due to warming temperatures, these regions are shifting away from a net sink or "storehouse" of carbon to a net source of carbon emissions. Chelsea Harvey at *The Washington Post* also drew from new analyses by the Climate Action Tracker on the progress China and India have made in meeting their emissions reductions goals under the Paris Climate Agreement. Overall, the two countries are on track to exceed their climate pledges while the current trajectory US emissions reductions lags behind.

The Trump Administration and the Paris Climate Agreement also consumed *cultural* coverage of climate change in May 2017, continuing an ongoing trend. Alexandra Zavis of the *Los Angeles Times* wrote about President Trump's visit with Pope Francis, who provided the President with a copy of his 2015 encyclical that called for global collective action to address climate change. Another article, this time in the *Des Moines Register*, summarized a recent report on activists and law enforcement officials focused on the Dakota Access Pipeline, describing how an international security firm targeted protesters opposed to the Dakota Access Pipeline with military-style counter-terrorism measures and closely collaborated with law enforcement authorities in five US states.

une coverage of climate change and global warming went up nearly 46% compared to May. This was attributed largely to the news surrounding US President Donald Trump's withdrawal from the 2015 UN Paris Climate Agreement, with media coverage on emergent US isolation following through the G7 summit a few weeks later. These June 2017 numbers were also a 24% increase from the amount of June 2016 climate change coverage around the world. This was predictably most pronounced at the epicenter of the (in)action, where coverage in June in North America doubled from the previous month's counts in May.

Article 28 of the Paris Agreement states that a party to the agreement may withdraw at the earliest after three years from when the agreement entered into force. Since the Paris Agreement entered into force

⁴⁴ http://www.desmoinesregister.com/story/news/politics/2017/05/28/report-military-style-tactics-used-againstdakota-access-pipeline-protesters/351734001/





³⁹ http://timesofindia.indiatimes.com/india/india-and-germany-are-made-for-each-other-says-pm-narendramodi/articleshow/58916444.cms

⁴⁰ https://www.nytimes.com/2017/05/08/climate/alaska-carbon-dioxide-co2-tundra.html?ref=energy-environment

⁴¹ http://www.pnas.org/content/114/21/5361

 $^{^{42}\} https://www.washingtonpost.com/news/energy-environment/wp/2017/05/15/trump-may-not-be-able-to-halt-the-worlds-climate-progress-thanks-to-china-and-india/?utm_term=.f524a66a6495$

⁴³ http://www.latimes.com/world/europe/la-fg-pope-encyclical-climate-change-20170524-htmlstory.html





on November 4, 2016, this process can be completed at the earliest on November 4, 2020 (the day after the next scheduled US Presidential election).

While coverage around the world has ebbed and flowed in 2017, generally coverage in the first six months of 2017 is still 19% down from the first six months of 2016. While ongoing media treatments from the December 2015 UN Paris Agreement fueled early 2016 attention, time will tell how this June 2017 coverage of the US Trump Administration withdrawal will fuel ongoing media representations through the July G20 summit in Hamburg and beyond.

So, the most prominent *political* theme in June 2017 proved to be largely focused on the Trump Administration and the Paris Climate Agreement withdrawal. Moreover, this theme contributed to the uptick in coverage around the world. Examples included reactions from Ireland (in *The Irish Times*)⁴⁵ to Zimbabwe (in *The Herald*)⁴⁶. However, political coverage was not limited just to this beginning-of-June development. In other news, G7 leaders – from Italy, Japan, Canada, UK, US, Germany and France – met in Bologna, Italy and issued a communique with a strong statement on climate change policy engagement, covered by *The Washington Post* among a number of outlets.⁴⁷ In addition, in mid-June, many media sources, including *The Wall Street Journal*, covered the story that a number of prominent oil companies – including Exxon Mobil, Total, Royal Dutch Shell, British Petroleum and General Motors – voiced support for a neoliberal US carbon taxation scheme developed by the 'Climate Leadership Council'.⁴⁸

Coverage of *scientific* dimensions of climate change in June 2017 included new studies of scientific and economic dimensions of climate change challenges. As examples, sources like *The Independent* (UK) covered an instantly influential opinion piece in the journal *Nature* that argued that the global community has three years to take ambitious action in order to bend the greenhouse gas emissions curve steeply enough to meet the Paris Agreement temperature goals. ⁴⁹ Earlier in the month of June, media attention was paid to a study published in the journal *Geophysical Research Letters* which found that that wildfires on the Great Plains have increased by over 350 percent over the past thirty years⁵⁰.

⁵⁰ https://www.washingtonpost.com/news/energy-environment/wp/2017/06/16/scientists-find-a-400-percent-increase-in-wildfire-destruction-in-the-great-plains/?utm_term=.5f0adaade83a





⁴⁵https://www.irishtimes.com/news/environment/trump-s-climate-move-was-inevitable-but-not-necessarily-fatal-1.3104818

⁴⁶ http://www.herald.co.zw/bemoaning-americas-big-environmental-betrayal/

https://www.washingtonpost.com/news/energy-environment/wp/2017/06/12/this-is-what-the-u-s-s-new-global-isolation-on-climate-change-looks-like/?utm_term=.68d7c1ee8595

⁴⁸ https://www.wsj.com/articles/big-oil-steps-up-support-for-carbon-tax-1497931202

⁴⁹ http://www.independent.co.uk/environment/world-climate-change-save-humanity-experts-global-warming-rising-sea-levels-food-a7813251.html





*The Guardian*⁵¹ and other outlets also covered a study in the journal *Science* that examined economic impacts in exacerbation of inequality from the effects of climate change⁵².

Coverage of *ecological* and *meteorological* dimensions of climate change in June 2017 centered primarily on heatwaves in the Northern Hemisphere. As examples, June 2017 heatwaves in Southern and Western India were also linked in the *Hindustan Times* to a study that found a 25% increase in heat wave days and duration from 1960 to 2009.⁵³ And a southwestern US heatwave around the summer solstice garnered media attention in the *Los Angeles Times* and in other sources.⁵⁴ *Cultural* dimensions of climate change in June 2017 included many stories of stated commitments from government (such as cities around the world) and non-nation state actors (such as NGOs and industry) to continue to carry out the commitments made in the Paris Agreement despite the US Federal government withdrawal.⁵⁵

In terms of the frequency of words in articles in the US, 'Trump' was invoked 7176 times through the 432 stories in June. Comparing this with other prominent personalities, (former US President) 'Obama' was mentioned 803 times, (US Environmental Protection Agency Administrator) 'Pruitt' was discussed 493 times and (White House spokesman) 'Spicer' was mentioned 296 times while (German Chancellor) 'Merkel' was discussed 249 times and (French President) 'Macron' was mentioned 230 times. In fact, 'Trump' was discussed more than twice as much as 'Paris' (referring to the 2015 UN Climate Agreement) (2387 times), 'science' (566 times) and 'health' (513 times) combined. Comparatively, in Australia, Prime Minister Malcolm Turnbull was mentioned 796 times to 773 mentions of Trump in 497 articles from *The Sydney Morning Herald, The Courier Mail & The Sunday Mail, The Australian, The Daily Telegraph & The Sunday Telegraph*, and *The Age* in June. In India, Prime Minister Narendra Modi was invoked 289 times to 296 mentions of Trump in 438 articles from *The Indian Express, The Hindu*, the *Hindustan Times*, and *The Times of India* in June. In Canada, Prime Minister Justin Trudeau was mentioned 258 times to 717 mentions of Trump in 248 articles from *The Globe & Mail, The Toronto Star*, and the *National Post* in June.

uly coverage of climate change and global warming consistently dropped in regions around the world. Compared to June 2017, coverage was down about 27% globally. However, June was a month of comparatively high levels of coverage, due mainly to the news surrounding US President Donald Trump's withdrawal from the 2015 UN Paris Climate Agreement on the first day of that month. July's counts from fifty-two sources across twenty-eight countries in seven regions around the world were up 23% from July coverage in the previous year.

https://www.nytimes.com/2017/06/01/climate/american-cities-climate-standards.html?ref=energy-environment& r=0





⁵¹ https://www.theguardian.com/environment/2017/jun/29/climate-change-income-inequality-environment

http://science.sciencemag.org/content/356/6345/1362

http://www.hindustantimes.com/mumbai-news/global-warming-effect-more-heat-wave-deaths-as-temperatures-rise-across-india/story-vVoEayG625Ech4WzLOkkiM.html

⁵⁴ http://www.latimes.com/local/lanow/la-me-ln-california-heat-wave-20170620-story.html





Much attention in July 2017 continued to be on events and developments associated with the US Trump Administration. In terms of the frequency of words in articles in the US media, 'Trump' was invoked 5035 times through the 376 stories in July in *The Washington Post, The Wall Street Journal, The New* York Times, USA Today, and the Los Angeles Times. This effectively furthered the Trump Dump. Comparing this with other prominent personalities, in US coverage, former US President Obama was mentioned 526 times, French President Macron (with whom US President Trump met on July 13) was mentioned 441 times, and Russian Prime Minister Putin (with whom US President Trump met at the July 7th-8th G20 Summit) was mentioned 444 times.

The most prominent *political* news in July 2017 was tethered to the July 7th-8th G20 Summit in Hamburg, Germany, in the context of Trump's first encounter with world leaders since his announcement of plans for a US withdrawal from the Paris Climate Agreement. At the Summit, despite concerns articulated in some news pieces that other nations may follow a US tact, world leaders of the G19 'took note' of the US exit and announced ongoing unity in their commitments for action on climate change. The final communique from the G20 Summit read "The leaders from the other G20 members state that the Paris Agreement is irreversible", while criticism of the Trump administration stance was widespread in the media both in the US and around the world. For example, in *The Wall* Street Journal former World Bank Chief Economist and Harvard University President Lawrence Summers expressed dismay regarding Trump's rejection "of the concept of global community". 56 Many news stories covered other world leader statements of ongoing support for the Paris Accord, including G20 Summit host and German Chancellor Angela Merkel, and Chinese President Xi Jinping. Chinese Foreign Minister Wang Yi expressed President Jinping's ongoing support for international cooperation in the form of the Paris Agreement to seek "solutions to the common challenges we face...as both a participant and a leader". 57 Further boomerang climate politics and policy engagement came at the US national and sub-national levels in July. For example, EPA Administrator Scott Pruitt introduced a military-strategy-style 'red team, blue team' approach to evaluating climate research for policy applications. Administrator Pruitt proposed television debates to 'advance science' in the public arena and this proposal was met with resounding criticism in the days that followed in July. 58 Also in the US in July, the 'We Are Still In' campaign to address climate change – a coalition of US states, cities and businesses – garnered media interest. For example, Hiroko Tabuchi and Lisa Friedman from *The New* York Times wrote about how these groups were working with outside experts to quantify their planned reductions in greenhouse gas emissions by the time of the next round of UN climate negotiations.⁵⁹ At the sub-national level, Governor Jerry Brown from the US State of California announced that he will

⁵⁹ https://www.nytimes.com/2017/07/11/climate/cities-states-businesses-emissions-climate-pact.html







⁵⁶ For example <u>https://www.ft.com/content/ea2849ea-6335-11e7-8814-0ac7eb</u>84e5f1

⁵⁷ http://news.xinhuanet.com/english/2017-07/09/c 136430384.htm

For example http://www.reuters.com/article/us-usa-epa-pruitt-idUSKBN19W2D0



host a September 2018 'Global Climate Action Summit'. That this event would take place on US soil amidst US Trump administration obstinacy on climate policy action generated a number of media accounts.⁶⁰

Coverage of *scientific* dimensions of climate change in July 2017 included new studies of scientific and economic dimensions of climate change challenges, managing to discuss them largely without mentioning the US Trump Administration. For example, Tim Radford reported on threats from climate change on bees of Europe as well as sea turtles in the Atlantic Ocean. These findings came from two separate studies – one from the *Journal of Animal Ecology* and another from the journal *Global Change Biology* – in July that rising CO₂ levels linked to increased atmospheric temperatures are linked to threats to ecosystem services, flora and fauna around the world. Other scientific findings included evidence from a July study in *Science* magazine of increased algal blooms in the US due to a combination of increased temperatures and heavier rainfall leading to increased agricultural runoff. Other scientific findings included combination of increased temperatures and heavier rainfall leading to increased agricultural runoff.

Coverage of *ecological* and *meteorological* dimensions of climate change in July 2017 included reporting early in the month of July about how a 2,240 square mile iceberg – estimated by many media accounts, like *The Washington Post*, to be the size of the US State of Delaware⁶³ – broke off the Larsen C ice shelf in Antarctica. Jonathan Amos from the *BBC* offered a different perspective that the iceberg was "about a quarter the size of Wales".⁶⁴ Other news coverage focused on airline flights that were canceled amidst a heatwave in the southwestern US, and on severe impacts from climate change to be felt in countries in Asia and the Pacific in decades to come.⁶⁵ Meanwhile, some media stories in July picked up on news that farmland on the African continent risks being deemed unusable due to drought associated with climate change, impacting over 40 million Africans through food shortages, insecurity and land disputes.⁶⁶

In the *cultural* sphere, Russ Mitchell and David Pierson from the *Los Angeles Times* reported on the announcement from Swedish automaker Volvo to phase out conventional internal combustion engines by 2019, and to only produce electric, hybrid or battery-powered automobiles going forward.⁶⁷ Meanwhile, Angelique Crisafis and Adam Vaughan from *The Guardian* relayed news of the French government's plans, with the support of French carmakers, to end sales of diesel- and gasoline-

⁶⁷ http://www.latimes.com/business/autos/la-fi-hy-volvo-electric-motors-20170705-story.html





⁶⁰ https://www.nytimes.com/2017/07/06/climate/jerry-brown-california-climate-summit.html? r=1

⁶¹ http://climatenewsnetwork.net/climate-brings-survival-and-sex-problems-to-the-wild/

https://insideclimatenews.org/news/27072017/climate-change-nitrogen-runoff-algae-dead-zones-rivers-ocean-study

⁶³ For example, Chris Mooney from *The Washington Post*: https://www.bbc.com/news/science-environment-40321674

⁶⁵ https://www.bloomberg.com/news/articles/2017-07-14/asia-at-risk-of-deeper-poverty-due-to-climate-change-adb-says

⁶⁶ https://www.nytimes.com/2017/07/29/world/africa/africa-climate-change-kenya-land-disputes.html? r=0





powered vehicles by 2040.⁶⁸ In addition, a *New York Magazine* cover story in early July by David Wallace-Wells about future low-probability but high-consequence climate change events and impacts garnered many meta-discussions about scientific accuracy and alarmism. For instance, Michael Mann, Susan Joy Hassol and Tom Toles argued in the pages of *The Washington Post* that "it feeds a paralyzing narrative of doom and hopelessness". 69



ugust media attention to climate change and global warming was down 20% globally from coverage in the previous month of July. August 2017 counts from fifty-two sources across twenty-eight countries in seven regions around the world were up 7% from coverage in August 2016.

In the US media, *political* inputs clearly influenced the content of coverage. Significant attention during August continued to be on events and developments associated with the US Trump Administration. In the US press, Trump was invoked 3046 times through the 532 stories in August in The Washington Post, The Wall Street Journal, The New York Times, USA Today, and the Los Angeles Times. In the UK press, Trump was mentioned in the Daily Mail & Mail on Sunday, Guardian & The Observer, The Sun, The Daily Telegraph & Sunday Telegraph, the Daily Mirror & Sunday Mirror, The Scotsman & Scotland on Sunday, and The Times & Sunday Times a combined 987 times in 446 August articles. This effectively continued the Trump Dump in 2017.

Looking further into coverage, hurricane Harvey – making landfall on US soil in Texas on August 25th as a Category 4 storm with winds of 130 mph – grabbed significant coverage relating to ecological and meteorological issues. In US media, the city of 'Houston' was invoked along with articles on climate change or global warming 3523 times, 'hurricane' was mentioned 1202 times and 'Harvey' was noted explicitly 1933 times. The ecological/meteorological event garnered a great deal of article content in the UK press as well, as the city of 'Houston' was cited 3116 times, 'Harvey' was mentioned 1431 times and 'hurricane' was explicitly referenced 1202 times as well.

The content of coverage of hurricane Harvey discussed the 'unprecedented' nature of the storm that left trillions of tons of water in Texas. A number of articles focused on the extreme precipitation event in a short period of time, while some articles discussed links with the physics of the atmosphere and oceans (where warmer air could hold more water and where warmer water could provide increased energy for the storm). For example, Dr. Kenneth Kunkel from the North Carolina Institute for Climate Studies told Lisa Friedman and John Schwartz of *The New York Times* that warmer ocean temperatures associated

⁶⁹ https://www.washingtonpost.com/opinions/doomsday-scenarios-are-as-harmful-as-climate-changedenial/2017/07/12/880ed002-6714-11e7-a1d7-9a32c91c6f40 story.html?utm term=.037b0b6bb2a3







⁶⁸ https://www.theguardian.com/business/2017/jul/06/france-ban-petrol-diesel-cars-2040-emmanuel-macron-volvo





with a changing climate likely fed the deluge.⁷⁰ Other articles focused on impacts from the storm, including human displacement and suffering⁷¹ as well as explosions of industrial chemical plants near Houston due to flooding and electrical power failures.⁷²

Further coverage of *ecological* and *meteorological* dimensions of climate change in August 2017 were tethered to record-breaking flooding in South Mumbai, India. Amrit Dhillon from *The Guardian* reported that the devastating flood event was part of a larger and unprecedented monsoon season in south Asia that is said to have adversely impacted more than 40 million people (with over 1,2000 feared dead) across India, Bangladesh and Nepal.⁷³ Reporting on wildfires in the Pacific Northwest of the US⁷⁴ along with fires in the formerly frozen tundra of Greenland⁷⁵ also dotted the August landscape of media reporting on climate change or global warming.

Bridging to media coverage of *scientific* dimensions of climate change in August 2017, a new study of deaths by extreme weather events in Europe (southern Europe in particular) generated a number of media accounts. This study from the journal *Lancet Planetary Health* found that over 150,000 people annually could die by 2100 – 99% of them due to extreme heat – if no mitigation and/or adaptation strategies are deployed to address vulnerability associated with climate change. Another study reported on by Damian Carrington from *The Guardian* in *Science Advances* found that as much as 30% of South Asia could face "dangerous and unsurvivable humid heat waves" in a changing climate without mitigation and/or adaptation measures taken. Through modeling scenarios, researchers Im, Pal and Eltahir also found that 1 in 25 year extreme heat waves could become annual heat waves in an area where the paradox of climate change – that those at the forefront of climate impacts are not those that contributed to the problem – rings as true as anywhere on planet Earth. Other studies also generated coverage in August. For example, Ian Johnstone at *The Independent* reported on a study by Millstein et

https://www.theguardian.com/environment/2017/aug/02/climate-change-to-cause-humid-heatwaves-that-will-kill-even-healthy-people





⁷⁰ https://www.nytimes.com/2017/08/28/climate/how-hurricane-harvey-became-so-destructive.html?action=click&pgtype=Homepage&clickSource=story-heading&module=span-abc-region®ion=span-abc-region&WT.nav=span-abc-region

https://www.washingtonpost.com/politics/full-extent-of-harveys-aftermath-starts-to-come-into-chilling-focus/2017/08/27/1b2b184a-8b56-11e7-8df5-c2e5cf46c1e2_story.html?utm_term=.1a89fc79f539

http://www.chron.com/news/houston-texas/texas/article/New-explosions-expected-at-Crosby-chemical-plant-12163386.php

https://www.theguardian.com/world/2017/aug/31/south-asia-floods-fears-death-toll-rise-india-pakistan-mumbai-building-collapses

⁷⁴ https://www.washingtonpost.com/news/powerpost/paloma/daily-202/2017/08/14/daily-202-evidence-of-climate-change-abounds-amid-extreme-weather-in-the-pacific-northwest/59910b8e30fb0462b8e1a9c4/?utm_term=.876006c17a28

⁷⁵ http://www.popsci.com/greenland-on-fire

⁷⁶ http://www.bbc.com/news/world-europe-40835663





al in *Nature Energy* that found that avoided fossil fuel burning due to rapid deployment of wind and solar energy helped drastically decrease major pollutants in the air and prevented up to 12,700 deaths and saved US\$220 billion over nine years in the US. ⁷⁸ Also, Doyle Rice from the *USA Today* covered NOAA 'State of the Climate' report findings by scientists from over sixty countries converging in agreement that 2016 was the hottest year on record, and that greenhouse gases hit their highest recorded concentration in nearly one million years. ⁷⁹

Prominent *political* news in August 2017 related to connections between climate change and the Islamic State, in that both are tied as the world's top global security concerns in a poll by the Pew Research Center of thirty-eight countries around the world. Lisa Friedman from *The New York Times* noted that while climate change topped the list of concerns in thirteen countries, it ranked third in the US behind cybersecurity and ISIS. ⁸⁰ And, as an example of ongoing political and politicized moves from the Trump Administration in August, Juliet Eilperin from *The Washington Post* reported that the National Climate Assessment's 15-person advisory panel was being disbanded. ⁸¹

And in the *cultural* sphere, connections made between the full eclipse passing across the continental US on August 21 and climate considerations made some news as well. For instance, in a piece called 'Should You Trust Climate Science? Maybe the Eclipse Is a Clue', links between climate contrarianism and eclipse contrarianism were discussed by Justin Gillis of *The New York Times*. ⁸² Meanwhile, other stories examined grid reliability of solar and wind in the face of the eclipse, such as an investigative piece in the *Financial Times* entitled 'US power grid passes a test as eclipse reduces solar generation'. ⁸³

eptember media stories on climate change and global warming were up 34% globally from coverage in the previous month of August. Scaling down from the global to monitoring in eight nation-states, coverage was also up in each country from the previous month of August 2017: 54% in Australia, 56% in Canada, 10% in Germany, 18% in India, 30% in New Zealand, 82% in Spain, 41% in the UK, and 16% in the US. September counts from fifty-two sources across twenty-eight countries in seven regions around the world were up

14% from coverage in September 2016.

https://www.nytimes.com/2017/08/18/climate/should-you-trust-climate-science-maybe-the-eclipse-is-a-clue.html







 $[\]frac{\text{78}}{\text{http://www.independent.co.uk/environment/us-wind-power-solar-energy-renewables-prevent-12700-deaths-2015-clean-air-climate-change-a7894066.html}$

⁷⁹ https://www.usatoday.com/story/weather/2017/08/10/global-warming-2016-confirmed-earths-hottest-year-record/556405001/

https://www.nytimes.com/2017/08/01/climate/islamic-state-climate-change-worlds-greatest-threats-pew-survey.html? r=1

⁸¹ https://www.washingtonpost.com/news/energy-environment/wp/2017/08/20/the-trump-administration-just-disbanded-a-federal-advisory-committee-on-climate-change/?nid&utm_term=.9503e87ccfd5





In September, coverage relating to *ecological* and *meteorological* issues grabbed attention. Hurricanes in the Caribbean Basin – Harvey (in late August), Irma (in early September) and Maria (in mid-September) garnered a range of stories about ecological and human impacts from the storms along with stressors on ecosystem services, flora and fauna. 'Hurricane' was the fourth most frequently invoked word of four letters or more⁸⁴ in articles across the US press – *The Washington Post, The Wall Street Journal, The New York Times, USA Today,* and the *Los Angeles Times* – that also invoked the terms climate change or global warming in September 2017, while 'people' (often relating to impacts from these storms) was the third most frequently used word. For instance, Laura King and Les Neuhaus reported in the *Los Angeles Times* on September 6th of the then-current human death toll in the Caribbean as hurricane Irma made its way to the Florida Coast.⁸⁵

In terms of attention paid to *political* content of coverage during September, in the US 'Trump' was invoked 3443 times through the 322 stories. 'Trump' was the most invoked term four-letter-or-more making print in climate change or global warming stories in September. 'President' was the second most utilized word in US press accounts. This effectively continued the Trump Dump that was mentioned in previous summaries and that has been detected since January 2017. These political stories were frequently linked to aforementioned ecological/meteorological pieces during September. Stories also mentioned the absence of mentions of climate change in US President Trump's address to the UN General Assembly in September, but the presence of other world leaders' critiques of the Trump Administration decision to withdraw from the Paris Agreement. For instance, Ben Glaze from *The Mirror* reported on UK Prime Minister Theresa May's September 20th address that contained a "thinly-veiled rebuke to the US President".⁸⁶

These politically-infused media portrayals bridge also to media coverage of *scientific* dimensions of climate change in September 2017. As an example, Dino Grandoni in *The Washington Post* recounted on September 14th how US President Donald J. Trump mentioned that these 2017 storms were still not as big as some that occurred in the 1930s and 1940s. ⁸⁷ This puzzling set of comments generated news coverage in how it appeared to demonstrate that the politicized nature of these issues can influence how one defines 'record setting' and 'big' ⁸⁸, while deflecting how the impacts of the 2017 storms can be exacerbated by coastal development and rising atmospheric and ocean temperatures. This scientifically-germane and politically-drenched stance also showed some signs of fissures among right-of-center

⁸⁸ A 1935 storm broke (and still holds) a record for lowest air pressure of any hurricane in the US, but Harvey has more rainfall than any other storm while Irma had the longest sustained category 5 wind speeds in history.





⁸⁴ 'Storm' was the twelfth most invoked term of four letters or more in US press articles also on climate change or global warming.

⁸⁵ http://www.latimes.com/nation/la-na-hurricane-irma-20170906-story.html

http://www.mirror.co.uk/news/politics/theresa-may-donald-trump-attack-11209524

https://www.washingtonpost.com/news/energy-environment/wp/2017/09/14/trump-says-weve-had-bigger-storms-when-asked-about-harvey-irma-and-climate-change/?utm_term=.4eca2e98e35f





political actors. For instance, Arizona Senator John McCain was quoted in media accounts stating a fundamental notion that it is important to recognize that the climate is changing.⁸⁹

Across the globe in September there were a range of stories that pervaded the *cultural* arena. Articles focused on issues such as local and indigenous-led conservation efforts in the Amazon. Dan Collyns from *The Guardian* reported September 6th on conflicts between these groups and miners as well as loggers in the region, and also to how these practices affect greenhouse gas emissions inventories from countries like Peru and Brazil. 90 In the corporate cultural sphere, a number of stories at the end of September discussed ExxonMobil's new voluntary commitments to curb methane emissions leaks from its oil and gas operations. For example, Clifford Krauss from The New York Times reported on a multiyear program to replace equipment and to train new workers in monitoring techniques.⁹¹

ctober media attention to climate change and global warming was down just slightly (7%) throughout the world from the previous month of September 2017. This decrease was felt regionally in Africa, Asia, Europe and North America, while counts held steady in the Middle East as they increased slightly in Oceania and South America. Compared to counts from fifty-two sources across twenty-eight countries in seven regions around the world in October 2016 (a year ago), the global numbers were up about 7%. Scaling down from the global to monitoring in eight countries, coverage was also up from the previous month of September 2017 in Australia (20%), Spain (2%) and New Zealand (27%). Coverage was down in Canada (-19%), Germany (-9%), India (-7%), the UK (-21%), and the US (-18%).

In the US, media attention continued to focus on movements relating to the Donald J. Trump Administration (in)actions. While this was also the case in the early months of 2017 around the world, the name 'Trump' appears to have become limited to the US media-scape in October 2017. In US news articles related to climate change or global warming, Trump was invoked 2399 times through the 274 stories in October (a remarkable ratio of nearly 9 times per article on average) in *The Washington Post*, The Wall Street Journal, The New York Times, USA Today, and the Los Angeles Times. However, in contrast in the UK press, Trump was mentioned in the Daily Mail & Mail on Sunday, The Guardian & The Observer, The Sun, The Daily Telegraph & Sunday Telegraph, the Daily Mirror & Sunday Mirror, The Scotsman & Scotland on Sunday, and The Times & Sunday Times 535 times in 498 October articles.

These stories lead into wider considerations of attention paid to *political* content of coverage during October. In this arena, Lisa Friedman and Brad Plumer from The New York Times reported in mid-October on US EPA Administrator Scott Pruitt's initiation of the federal rollback of the Clean Power

https://www.nytimes.com/2017/09/25/business/energy-environment/exxon-methane-leaks.html







⁸⁹ http://thehill.com/policy/energy-environment/349980-mccain-we-have-to-understand-that-the-climate-may-be-changing

https://www.theguardian.com/environment/2017/sep/06/six-farmers-shot-dead-over-land-rights-battle-in-peru





Plan, despite the lack of a replacement measure to propose in its place⁹². Timothy Puko from *The Wall Street Journal* reported on power plants nonetheless staying the course for emissions reductions plans due to technological capabilities, consumer demand and cheap natural gas driving demand⁹³. While reports of morale being lifted in some coal companies and coal communities, widespread opposition like that reported by Oliver Milman in *The Guardian*⁹⁴ effectively characterized the outdated effort like something akin to saving the eight-track tape in the age of digital music production (a major difference being that this EPA rollback cuts to the heart of carbon-based industry and society as well as to one of the greatest environmental challenges of the 21st century). And as politics met economics in October, Nathan Bomey in *USA Today* reported how two big US auto companies – General Motors and Ford – announced plans to introduce over thirty models combined in the next five to six years⁹⁵ while news reports at the end of October discussed the US Bureau of Labor Statistics new data that US solar installation and wind technician jobs are the fastest growing, with plans to double by 2026⁹⁶. These business trends and innovations were discussed as catalysts for policy measures to potentially follow.

In October, coverage relating to *ecological* and *meteorological* issues grabbed a great deal of attention. Stories like a piece in *The Times* (UK) on floods and landslides killing at least 68 people in Vietnam after a tropical depression hit the central and northern regions of the country in early October⁹⁷ were followed by stories like an article by Jacques Leslie in the *Los Angeles Times* about the devastating northern California wildfires and their record-breaking human toll as well as widespread property damage⁹⁸, and a piece by Dino Grandoni in *The Washington Post* linking these wildfires to economic costs to the US Federal government⁹⁹.

Across the globe in October there were a range of stories that pervaded the *cultural* arena. Polls in October pointed consistently to willingness to support and take action on climate change around the world. For example, Seth Borenstein and Emily Swanson – in an article then run in a number of national sources – reported on a poll from the *Associated Press*-NORC Center for Public Affairs Research and the Energy Policy Institute at the University of Chicago that more than half of US Americans want state and local governments to step up and act on climate change in the absence of US

https://www.washingtonpost.com/news/powerpost/paloma/the-energy-202/2017/10/19/the-energy-202-western-wildfires-spark-compromise-on-firefighting-in-washington/59e7ada730fb041a74e75e04/?utm_term=.6e0afdfff055





⁹² https://www.nytimes.com/2017/10/09/climate/clean-power-plan.html?_r=0

https://www.wsj.com/articles/epa-moves-proposal-to-withdraw-obama-power-plant-rules-1507657014

⁹⁴ https://www.theguardian.com/environment/2017/oct/10/trump-climate-change-clean-power-plan-fightback

https://www.usatoday.com/story/money/cars/2017/10/02/gm-electric-vehicles/722896001/

https://apnews.com/f611051e32c04146985f52194daa02ba/Labor-Department:-Solar,-wind-jobs-to-boom-over-next-decade

⁹⁷ https://www.thetimes.co.uk/article/storm-khanun-death-toll-hits-68-invietnam-sn8ssnfch

⁹⁸ http://beta.latimes.com/opinion/op-ed/la-oe-leslie-santa-rosa-fire-20171011-story.html





Federal action¹⁰⁰. And amid many *scientific* studies on climate change and interconnected issues in October, Amina Khan from the *Los Angeles Times* covered a new study in *Science Advances* linking strains in the marine food web, ocean warming, El Niño Southern Oscillation and a changing climate ¹⁰¹

ovember media attention to climate change and global warming was up just slightly (3%) throughout the world from the previous month of October. Increases were detected most strongly in Asia, the Middle East, Africa and Europe, with a decrease in Oceania and counts holding steady in the Americas. Compared to counts from fifty-two sources across twenty-eight countries in seven regions around the world in November 2016 (a year ago), the global numbers were actually down about 23%. The high levels of coverage in November 2016 were largely attributed to the US Presidential election of Donald J. Trump and the concatenate Marrakech round of international climate negotiations (COP22). While this November was punctuated with the Bonn round of climate talks (COP23), it did not prove to be nearly

At the country level, coverage was also up from the previous month of October in Germany (17%), India (21%), Spain (8%), the UK (14%), and the US (2%). Coverage was down in Australia (-39%), Canada (-7%) and New Zealand (-29%).

as resonant a media event-come-story as those that unfolded in the previous November.

The five representative US sources showed continuing signs of a Trump Dump while this was not evident in other countries around the world in November. In US news articles related to climate change or global warming, Trump was invoked 2816 times through the 280 stories in November (a ratio of over 10 times per article on average) in *The Washington Post, The Wall Street Journal, The New York Times, USA Today*, and the *Los Angeles Times*. However, in contrast in the UK press, Trump was mentioned in the *Daily Mail & Mail on Sunday, The Guardian & The Observer, The Sun, The Daily Telegraph & Sunday Telegraph*, the *Daily Mirror & Sunday Mirror, The Scotsman & Scotland on Sunday*, and *The Times & Sunday Times* 724 times in 566 November articles (a ratio of just over one mention per article on average).

These stories lead into wider considerations of attention paid to *political* content of coverage during the month of November. In this arena, coverage of the November 6-17 international climate talks in Bonn Germany (COP23) dominated news attention. Of note, Doyle Rice in the *USA Today* reported on November 7th that Syria's move to join the Paris Agreement meant that the USA Trump Administration would become the one nation on earth to not be a part of the international climate

http://beta.latimes.com/science/sciencenow/la-sci-sn-dolphin-food-chain-20171018-story.html





 $[\]frac{100}{\text{https://apnews.com/c52326210e8045efa60aae55c32d73f3/AP-NORC-poll:-Americans-want-local-leaders-to-fight-warming}$





agreement, once the US fully moves out of the accord. Also, later in November, news stories covered how the US Environmental Protection Agency held its only public hearing on replacing the Clean Power Plan in Charleston, West Virginia, an area considered 'the heart of coal country'. John Schwartz from *The New York Times* reported on November 28th of hours of emotional testimony from a range of stakeholder and interest groups during the hearing. 103

Media accounts also focused on *scientific* dimensions of climate change and global warming. For example, the US Global Change Research Program Report release by thirteen US agencies in early November (with findings at odds with the stance of the Trump Administration) generated coverage. Brady Dennis, Juliet Eilperin and Chris Mooney from *The Washington Post* wrote a November 3 story entitled "Trump Administration Releases Report Finding 'No Convincing Alternative Explanation for Climate Change", naming human activity as the dominant driver of contemporary climate change. The authors stated that this is "a conclusion at odds with White House decisions to withdraw from a key international climate accord, champion fossil fuels and reverse Obama-era climate policies". ¹⁰⁴

Across the globe in November, there were a range of stories that intersected with the *cultural* arena. For example, Lisa Friedman from *The New York Times* wrote on November 11th about the #WeAreStillIn social movement afoot to express commitments to reduce greenhouse gas emissions as local and regional scales while offsetting the lack of commitment to mitigate climate change in the US Federal government.¹⁰⁵

In November, coverage relating to *ecological* and *meteorological* issues grabbed attention. There were a number of stories like a November 6th piece by Fiona Harvey in *The Guardian* that related news that the World Meteorological Organization announced that 2017 was on track to become one of the top three hottest years on record (along with 2015 and 2016). ¹⁰⁶ In addition, stories continued to cover connections between climate change and extreme events, documenting Puerto Rico's continued challenges to recover from hurricane Maria two months after the storm passed over the island. One story by Milton Carrero Galarza and Kurtis Lee from the *Los Angeles Times* documented how thousands of residents have begun to migrate to the US mainland. ¹⁰⁷

https://www.theguardian.com/environment/2017/nov/06/2017-set-to-be-one-of-top-three-hottest-years-on-record http://www.latimes.com/nation/la-na-puerto-rico-electricity-20171118-story.html





 $[\]frac{_{100}}{_{100}} \frac{_{https://www.usatoday.com/story/weather/2017/11/07/u-s-now-only-country-not-part-paris-climate-agreement-after-syria-signs/839909001/_{_{100}}$

¹⁰³ https://www.nytimes.com/2017/11/28/climate/epa-repeal-obama-climate-rule.html? r=0

https://www.washingtonpost.com/news/energy-environment/wp/2017/11/03/trump-administration-releases-reportfinds-no-convincing-alternative-explanation-for-climate-change/?utm_term=.7ec7aed04979

https://www.nytimes.com/2017/11/11/climate/un-climate-talks-bonn.html?_r=2



ecember media attention to climate change and global warming was down slightly (7%) throughout the world from the previous month of November 2017. Increases were detected most strongly in North America, holding relatively steady in South America and with slight decreases in Asia, the Middle East, Africa, Oceania and Europe. Compared to counts from fifty-two sources across twenty-eight countries in seven regions around the world in December 2016 (a year ago), the global numbers were actually down about 12.5%. The high levels of coverage in December 2016 were largely attributed to the discussions of the ramifications of the US election of Donald J. Trump on climate change and global warming policy action and engagement in the coming year.

At the country level, coverage was generally down from the previous month of November 2017. This was the case in Germany (-38%), India (-15%), the United Kingdom (UK) (-4%), Australia (-16%), Canada (-6%) and New Zealand (-16%). The exception was the United States (US) where coverage was up 49% in December 2017 compared to the previous month.

Still showing ongoing Trump Dump trends in the US (but not elsewhere), in December US news articles related to climate change or global warming, Trump was invoked 2757 times through the 417 stories this month (a ratio of 6.6 times per article on average) in *The Washington Post*, *The Wall Street Journal*, *The New York Times*, *USA Today*, and the *Los Angeles Times*. However, in contrast in the UK press, Trump was mentioned in the *Daily Mail & Mail on Sunday*, *The Guardian & The Observer*, *The Sun*, *The Daily Telegraph & Sunday Telegraph*, the *Daily Mirror & Sunday Mirror*, *The Scotsman & Scotland on Sunday*, and *The Times & Sunday Times* 640 times in 543 December articles (a ratio of approximately 1.2 mentions per article on average).

Ongoing attention was paid primarily to *political* content of coverage during December. Many other stories too took on primarily political dimensions of climate change or global warming. For other brief instances, three examples here can represent these trends in December. First, the 'One Planet Summit' hosted in Paris by French president Emmanuel Macron – two years following the Paris climate talks (COP21) and consequent Paris Agreement – generated media attention around the world. William Horobin from *The Wall Street Journal* reported on numerous private sector commitments made there by businesses, investment groups and government groups. In particular, French insurer AXA announced it would pull investments from coal and oils sands, while the World Bank revealed that it would no longer finance oil and gas exploration after 2019. In addition, Angela Charlton and Sylvie Corbet of the Associated Press reported (in a piece published in the *USA Today*) that fifty world leaders joined many business actors like Bill Gates and Elon Musk and celebrities like Arnold Schwarzenegger

 $^{^{108}\} https://www.wsj.com/articles/investors-pledge\underline{-cuts-to-fossil_fuel-commitments-at-paris-meeting-1513117244}$







and Sean Penn to continue to press forward on climate commitments. ¹⁰⁹ In addition, they reported on French President Emmanuel Macron's announcement to award \$70,000,000 in grants to eighteen scientists to relocate to France to continue with research through the duration of the Trump Administration regime (one researcher – Joost de Gouw – has been part of CIRES where MeCCO is also based; he is moving to the Université de Lyon). 110 Second, China's announcement of plans for a national carbon emissions trading scheme focused on the power generation sector (producing approx. 40% of China's CO₂ emissions and 15% of global CO₂ emissions) garnered significant coverage. Keith Bradsher and Lisa Friedman from *The New York Times* reported on how this policy intervention is projected to reduce CO₂ emissions approximately 27% by 2030 and will contribute to China's peaking and then overall reduction in CO₂ emissions by 2030. 111 This news of the world's largest carbon market in China came in stark contrast with concatenate policy retreat in the US. Third, news of the US tax overhaul – signed by US President Donald Trump on December 22 – and its implications for climate and environment spawned significant attention, primarily in the US itself. 112 For example, Timothy Puko of *The Wall Street Journal* reported on the provision of the tax bill that will open up the Arctic National Wildlife Refuge (ANWR) to drilling-thirty oil and gas operations through lease sales and development in the area in the years to come. 113

Media accounts also focused on primarily *scientific* dimensions of climate change and global warming. Four brief examples help represent stories across the month of December. First, climate impacts on flora and fauna continued to pervade overall coverage. For example, Damian Carrington from *The Guardian* covered a new report's findings that climate change is affecting bird migration and reproduction patterns. The Royal Society for the Protection of Birds noted that temperature increases into 2017 have endangered several species while some warmer-weather species are now arriving in the UK for the first time. Second, the science of economics new research sparked coverage in December. A December 7th article by Energy Editor Andrew Ward in the *Financial Times* pointed to the profit losses forecasted for coal-fired power plants in Europe in the coming years. He wrote that the analysis from Carbon Tracker found that 97% of plants are forecasted to operate at losses by 2030 due to a mix of climate and environment as well as political economic factors. This was one of over one hundred media accounts relating to this study, and was among a wider range of coverage of the economics of climate change in December. Third, research into climate change interactions with renewables generated coverage in December. For example, new research by Dr. Kristopher Karnauskas (also part

¹¹⁵ https://www.ft.com/content/f32c3caa-daf3-11e7-a039-c64b1c09b482





¹⁰⁹ https://www.usatoday.com/story/news/world/2017/12/12/paris-climate-summit/943389001/

https://www.univ-lyon1.fr/actualites/make-our-planet-great-again-seminaire-du-pr-joost-de-gouw-a-lyon-928482.kjsp

https://www.nytimes.com/2017/12/19/climate/china-carbon-market-climate-change-emissions.html

https://law.stanford.edu/2017/12/20/the-tax-bill-climate-change-and-anwr/

https://www.wsj.com/articles/oil-glut-makes-alaska-reserves-less-attractive-to-drillers-1513765801

https://www.theguardian.com/environment/2017/dec/05/climate-change-is-radically-reshuffling-uk-bird-species-report-finds





of CIRES where MeCCO is based) and colleagues in the journal *Nature Geoscience* found that changing wind patterns due to a changing climate will reduce wind power generation by 17% in the US Heartland and a 10% drop in Britain by 2100. Journalist Chris Mooney from *The Washington Post* pointed to not-so-simple tradeoffs associated with these reductions on baseline wind energy resources in the US and UK in contrast with forecasts of increasing wind power in some Southern Hemisphere locations. Fourth, many scientific studies continued to report on climate change trends at the Earth's poles. For example, Seth Borenstein from the *Associated Press* wrote about the 'Arctic Report card' released by the National Oceanic and Atmospheric Administration noting more rapidly melting permafrost than previous years and a rate of unparalleled sea ice decline in the last fifteen centuries. 117

Across the globe in December, there were a range of stories that intersected with the *cultural* arena. For example, stories focused on the #WeAreStillIn movement which continue with commitments of the Paris Agreement even in the absence of US Federal Government participation. A story by Aamer Madhani from the *USA Today* articulated the December 3rd signing of the 'Chicago Climate Charter' as part of a movement of now 388 mayors of US cities representing 68 million US residents committed to Paris Agreement reductions goals. At that particular meeting, fifty mayors signed on to this charter that additionally noted the importance of bringing in voices from marginalized communities like racial and ethnic minorities as well as city residents living in poverty in order to strengthen a coordinated effort to effectively confront 21st century climate change. As another brief example, stories in December continued to focus as well on climate refugees across the globe. Fiona Harvey from *The Guardian* reported on new research from the journal *Science* that found that asylum applications since 2000 to the European Union have increased when extreme weather events or crop-growing challenges associated with temperature and precipitation plagued origin countries. Harvey noted that the study concluded that applications are forecasted to continue to increase with rising temperatures, increased floods and droughts as well as extreme weather events associated with climate change. Increased floods and droughts as well as extreme weather events associated with climate change.

In December, coverage relating primarily to *ecological* and *meteorological* issues also grabbed attention. There were a number of stories about extreme weather events around the world. For example, many stories from the *Los Angeles Times* and elsewhere covered the unfolding and unprecedented December tragedies. ¹²⁰ As California governor Jerry Brown called a state of emergency in Ventura County, ¹²¹ many discussed this as a possible sign of a 'new normal' as it related to climate change. On December 31st, *Los Angeles Times* journalist Joe Mozingo reported that the Thomas Fire that ignited

http://www.latimes.com/local/lanow/la-me-thomas-fire-santa-barbara-fire-20171210-story.html http://www.latimes.com/local/lanow/la-me-ln-socal-wildfires-main-20171206-story.html



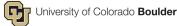


 $[\]frac{\text{116}}{\text{https://www.washingtonpost.com/news/energy-environment/wp/2017/12/11/wind-energy-is-supposed-to-fight-climate-change-but-climate-change-is-fighting-back/?utm_term=.2e5c7226230b}$

https://apnews.com/a58aeed6000243fc80b41957579c1db1/Arctic-report-card:-Permafrost-thawing-at-a-faster-pace https://www.usatoday.com/story/news/2017/12/04/u-s-mayors-sign-pact-track-progress-parisagreement/920305001/

https://www.theguardian.com/environment/2017/dec/21/devastating-climate-change-could-see-one-million-migrants-a-year-entering-eu-by-2100





December 4th in Southern California became the largest by size in the state since modern recordkeeping began (having burned over 281,900 acres) by the end of the 2017. ¹²² On December 30th, incident command in Los Padres National Forest determined that the fire was 92% contained and that they did not anticipate full containment until approximately January 21, 2018. ¹²³ As another example, a special collection of research from the *Bulletin of the American Meteorological Society* interrogated links between extreme events and climate change in 2016. Brad Plumer and Nadja Popovich from *The New York Times* reported that study authors found that climate change was a "significant driver" in 21 of 27 events examined around the world. Plumer and Popovich also reported that five of these events – record temperatures around the world, coral bleaching in the Great Barrier Reef, drought in Africa, a patch of warm water over the Pacific Ocean and wildfires in North America – were determined to be most likely due to global warming. ¹²⁴

While the World Meteorological Organization, NASA and NOAA as well as the UK Met Office all forecast that 2017 will have been the second or third warmest year on record (after 2016 and possibly 2015), 125, 126 we still look to 2018 with great optimism. Happy New Year!

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report citation: Boykoff, M., Andrews, K., Daly, M., Katzung, J., Luedecke, G., Maldonado, C. and Nacu-Schmidt, A. (2018) *A Review of Media Coverage of Climate Change and Global Warming in 2017*, Media and Climate Change Observatory, Center for Science and Technology Policy Research, Cooperative Institute for Research in Environmental Sciences, University of Colorado [http://sciencepolicy.colorado.edu/icecaps/research/media_coverage/summaries/specia 1 issue 2017.html]

https://www.reuters.com/article/us-global-weather/global-temperature-to-rise-next-year-but-no-new-record-uk-met-office-idUSKBN1EF1CX







http://www.latimes.com/local/california/la-me-epic-fires-california-20171231-story.html

https://inciweb.nwcg.gov/incident/article/5670/42416/

https://www.nytimes.com/2017/12/14/climate/climate-extreme-weather-attribution.html