

EXTREME SILENCE

**How the U.S. media have failed to connect
climate change to extreme heat in 2018**



Acknowledgments

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Introduction

One week after summer officially began, a wave of extreme heat enveloped the United States and pushed the temperatures in many states into record-breaking territory. In a twelve-day period from June 27 to July 8, over 400 daily maximum temperature records were broken in localities in thirty-seven states.¹ Four states set all-time temperature records.² Multiple areas in California surged to almost 120 degrees.³ Power grids failed.⁴ Roads buckled and melted under the stress of the extraordinary heat.⁵ All-time records were exceeded across the globe—Algeria reported an all-time hottest temperature of 124 degrees, while “weatherproof” roofing in Scotland melted.⁶

No single heat event, alone, is an indicator of global warming, but this nearly two-week period of extreme heat in the U.S. and abroad—and the experiences that came with it, ranging from inconvenience to chaos—is exactly what we can expect in a warming world. As Jason Samenow of *The Washington Post* accurately stated: “No single record, in isolation, can be attributed to global warming. But collectively, these heat records are consistent with the kind of extremes we expect to see increase in a warming world.”⁷

With a few notable exceptions, major U.S. media outlets are largely failing to connect these monumental weather events to climate change. Similarly, when local media report on record-breaking temperatures and extended heat waves that directly affect their readers, they typically fail to connect the events to the warming trends that scientists have been predicting for years. In fact, this report finds that media were significantly *less* likely to connect extreme heat to climate change when reporting during a major heat event.

This report examines media coverage of extreme heat and climate change from January 1 to July 8 2018 (referring to that period as 2018 “to date” or “this year”), as well as in the context of the major heat event that spread over the Northern Hemisphere over a twelve-day period starting on June 27 and ending on July 8.⁸ The report considers a range of sources: the top 50 U.S. newspapers by circulation, national programming from ABC, CBS, CNN, Fox News Network, MSNBC, and NBC, and

¹ National Centers for Environmental Information, “Data tools: Daily weather records,” *National Oceanic and Atmospheric Administration*. <https://pubc.it/2LQMdsm>.

² Jason Samenow, “Red-hot planet: All-time heat records have been set all over the world during the past week,” *The Washington Post*, July 5, 2018. <https://pubc.it/2NM2TBE>.

³ Jason Samenow, “All-time high temperature records set throughout Southern California, including Los Angeles,” *The Washington Post*, July 6, 2018. <https://pubc.it/2NJFmBu>.

⁴ Jason Samenow, “Record heat put thousands of Californians in the dark Friday. Scientists predicted this from climate change,” *The Washington Post*, July 9, 2018. <https://pubc.it/2LP0Dr6>.

⁵ Eric Lacy and Sarah Lehr, “‘Road buckling’ closes portions of I-69 during scorching weekend,” *Lansing State Journal*, July 1, 2018. <https://pubc.it/2LNTsBb>; “Road appears to be melting in Lancaster County,” WGAL News 8, July 3, 2018. <https://pubc.it/2LSuT6a>.

⁶ Jason Samenow, “Africa may have witnessed its all-time hottest temperature Thursday: 124 degrees in Algeria,” *The Washington Post*, July 6, 2018. <https://pubc.it/2LQ2a2h>; “Science Centre roof ‘melts’ on hottest ever June day in Glasgow,” *BBC News*, June 28, 2018. <https://pubc.it/2NM3aVc>.

⁷ Jason Samenow, “Red-hot planet: All-time heat records have been set all over the world during the past week,” *The Washington Post*, July 5, 2018. <https://pubc.it/2uNqKtO>.

⁸ This report refers to this time period as “the recent heat waves.”

newspaper coverage in the 13 states in which 10 or more heat records were broken during the period.⁹

Of the pieces that mentioned climate change in the context of heat, we further assessed how well they discussed the connection. Though far too few in number, the reporters connecting climate change to heat events are doing so in a number of sound and beneficial ways that reflect the current science and make the crisis salient to their audience. Reporters are making the connection by interviewing climate experts, citing data and analysis from federal agencies such as the National Weather Service and the National Oceanic and Atmospheric Administration (NOAA), comparing current temperatures with historic records and norms, localizing major national findings, and exposing climate-related public health and economic impacts in their communities.

Notably, a number of news outlets are covering climate by printing or adapting stories from other outlets or wire services such as the Associated Press, which has journalists dedicated to covering the climate crisis. In this way, they are managing to report well on climate for their audiences even if they lack the resources to do so on their own.

Summary of Significant Findings

In the top 50 newspapers, a total of 760 articles mentioned extreme heat, heat waves, record heat, or record temperatures from January 1 to July 8, 2018. One hundred thirty-four of these pieces (17.6 percent) also mentioned climate change or global warming. During the period June 27 to July 8, only 23 of 204 heat-related articles (11.3 percent) mentioned climate, a decline of 36 percent.

Ten of the top 50 newspapers made no mention of climate change in the context of extreme heat, heat waves, record heat, or record temperatures from January 1 to July 8 of this year, although all of them published one or more articles on heat-related topics.

In the states we examined, there were a combined 1,730 articles on heat in 2018 to date, with 195 (11.3 percent) mentioning climate. During the twelve-day period, there were 673 articles, with just 26 (3.9 percent) mentioning climate, a decline of 66 percent.

National programming from ABC, CBS, NBC, CNN, Fox News Network, and MSNBC mentioned climate change in 16 heat-related pieces to date in 2018, out of 226 total pieces (7.1 percent). Although a sizeable portion of that heat coverage occurred during the recent heat waves—114 pieces, or 50.4 percent—just one piece (0.9 percent) mentioned climate change. ABC stands out for running 23 heat-related pieces to date but failing to mention climate change entirely. Fox had just two heat-related pieces. One mentioned climate change, but it was a climate-denial segment.

Overall, these findings suggest that the extreme heat event that scorched much of the U.S. over nearly two weeks in late June and early July 2018 generally failed to prompt conversations about

⁹ Alaska, California, Colorado, Maine, Massachusetts, Michigan, New Hampshire, New York, Pennsylvania, Texas, Utah, Vermont, West Virginia.

climate change in national or local media. To the contrary, outlets in each category we examined—national broadcast networks, the top 50 newspapers, and newspapers in states in which 10 or more heat records were broken—were significantly *less likely* to mention climate change in heat-related content during the recent heat waves than they were during 2018 to date on average.

We also looked at pieces that connected extreme heat and climate change and noted a few further points: Of the articles that mentioned climate change or global warming, 24.8 percent of the top 50 outlets and 25.1 percent of the state newspapers quoted climate experts, and 20.1 percent of the articles were reprinted or repackaged from newswire sources or larger papers like *The New York Times* or *The Washington Post*. The overwhelming majority of these articles are from the Associated Press.

We identified no climate denial pieces in response to the heat wave, and arguably none in any other heat-related reporting this year to date. The single borderline case is the Fox News segment mentioned above.

Methodology

For this analysis, we used Westlaw and LexisNexis to search for terms related to extreme heat, record heat, or record heat waves,¹⁰ then searched again for those terms and “climate change” or “global warming.” We searched the top 50 U.S. newspapers by circulation,¹¹ six major broadcast networks,¹² and all newspapers in Westlaw’s database in each of the 13 states in which 10 or more localities set heat records from June 27 to July 8. We provide figures for both January 1 to July 8, 2018 (which this report generally references with phrases such as “the year to date”) and well as for the period June 27 to July 8, 2018 (generally referred to with phrases such as the “recent heat event” or the “June-July heat wave”).

In most cases, we credited a piece with mentioning heat or climate if it made the barest mention of the relevant terms—that is, if the piece merely turned up in the search results for those keywords. However, we eliminated two types of pieces. First, we discounted pieces that were clear letters to the editor or the equivalent, with titles such as “Letters” or “Your turn.” Second, we excluded false positives in broadcast transcripts. A transcript of an hour-long television program may include heat-related terms and climate terms in different, completely unrelated segments. One example is a

¹⁰ The terms follow: any iteration of “heat record,” “record heat,” or “heat wave,” the phrase “extreme heat,” or any iteration of “record temperature,” or “record high temperature.” We searched Westlaw for all sources except *The New York Times* and *The Wall Street Journal*, for which we used LexisNexis.

¹¹ The outlets are *Arizona Republic*, *Arkansas Democrat-Gazette*, *Atlanta Journal-Constitution*, *Baltimore Sun*, *Boston Globe*, *Buffalo News*, *Chicago Sun-Times*, *Chicago Tribune*, *Cincinnati Enquirer*, *Columbus Dispatch*, *Dallas Morning News*, *Denver Post*, *Detroit Free Press*, *East Bay Times*, *Honolulu Star-Advertiser*, *Houston Chronicle*, *Indianapolis Star*, *Kansas City Star*, *Las Vegas Review-Journal*, *Los Angeles Times*, *Mercury News*, *Miami Herald*, *Milwaukee Journal Sentinel*, *New York Daily News*, *New York Post*, *New York Times*, *Newsday*, *Tribune-Review*, *Oklahoman*, *Omaha World-Herald*, *Orange County Register*, *Oregonian*, *Portland*, *Orlando Sentinel*, *Philadelphia Inquirer*, *Pittsburgh Post-Gazette*, *Plain Dealer*, *Sacramento Bee*, *San Diego Union-Tribune*, *San Francisco Chronicle*, *Seattle Times*, *St. Louis Post-Dispatch*, *St. Paul Pioneer Press*, *Star Tribune*, *Star-Ledger*, *Sun-Sentinel*, *Tampa Bay Times*, *Times-Picayune*, *USA Today*, *Virginian-Pilot*, *Wall Street Journal*, and *The Washington Post*.

¹² The outlets are ABC, CBS, CNN, Fox News Network, MSNBC and NBC.

CNN transcript that mentions climate change in a segment on Scott Pruitt's resignation from the U.S. Environmental Protection agency and then, much later in the program, mentions record-breaking temperatures in a weather forecast without connecting the topic to climate change.¹³ We read each television transcript that mentioned climate change and excluded these false positives from the counts of pieces mentioning climate in the context of heat.

When discussing the results for newspapers, we provide two sets of numbers, one for all articles and another for articles with more than 200 words. We used a 200-word minimum as a rough proxy for forecasts or heat advisories in which one might not expect mentions of climate change. However, omitting those pieces makes very little difference to the numbers overall.

We drew temperature data from the NOAA National Centers for Environmental Information and identified states in which 10 or more localities set daily maximum temperature records from June 27 to July 8.¹⁴ For each state, we searched all newspapers in the Westlaw database using the methods described above.

Primary Analysis: During Heat Wave, An Already Poor Performance Wilts Further

From June 27 to July 8, a high pressure system moved over North America and roasted a large portion of the U.S. Areas in at least 18 states had heat advisories, and localities in 37 different states set records.¹⁵ In 13 states, more than 10 records were broken,¹⁶ and Colorado and New York each had more than 50. This spate of broken records followed the hottest May and third-hottest June on record for the U.S.¹⁷

Top 50 Newspapers

Among the top 50 newspapers, 760 articles mentioned extreme heat, heat waves, record heat, or record temperatures in 2018 to date, and 134 of them (17.6 percent) mentioned climate change or global warming. During the period June 27 to July 8, the rate of connecting heat to climate fell dramatically. Just 23 of 204 heat-related articles (11.3 percent) mentioned it, a 36 percent drop.

¹³ CNN, CNN Newsroom, "Pruitt is Out Amid Scandals; Rescuer Loss his Life Saving Kids; Trump is Back to Insulting Opponents; Mom Reunited with Daughter After 55 Days. Air . . ." July 6, 2018.

¹⁴ National Centers for Environmental Information, "Data tools: Daily weather records," 2018. <https://pubc.it/2LQMdsm>.

¹⁵ Doyle Rice, "Dangerous, oppressive heat wave to scorch central, eastern US as 'heat dome' expands," *USA Today*, June 28, 2018. <https://pubc.it/2LQVS2b>. States that set at least one daily temperature record: Alaska, Arizona, California, Colorado, Connecticut, Florida, Hawaii, Idaho, Illinois, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oregon, Pennsylvania, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

¹⁶ States that broke ten temperature records or more: Alaska, California, Colorado, Maine, Massachusetts, Michigan, New Hampshire, New York, Pennsylvania, Texas, Utah, Vermont, and West Virginia.

¹⁷ See, e.g., "Contiguous U.S. had its warmest May on record," *National Oceanic and Atmospheric Administration*, June 6, 2018. <https://pubc.it/2NMhk9b>; "June 2018 ranks third warmest on record for U.S.," *National Oceanic and Atmospheric Administration*, July 9, 2018. <https://pubc.it/2NM3lQm>.

Excluding articles with 200 or fewer words, the numbers are 133 of 674 (19.7 percent) for 2018 to date and 22 of 182 (12.1 percent; a drop of 39 percent) during the recent heat waves. In absolute numbers, *The New York Times*, *The Washington Post*, the *Los Angeles Times*, and the *Boston Globe* led with the most articles connecting heat to climate change (Table 1). When measured by the percentage of articles on heat that mention climate, the *Orlando Sentinel*, the *Atlanta Journal-Constitution*, and the *St. Paul Pioneer Press* took the top three spots (Table 2).

Table 1: Top 11 newspapers by number of articles connecting heat and climate, January 1 to July 8, 2018

| Newspaper | Climate Mentions | Heat Articles | Percentage |
|-------------------------|------------------|---------------|------------|
| The New York Times | 14 | 58 | 22.8% |
| The Washington Post | 13 | 32 | 40.6% |
| Los Angeles Times | 11 | 31 | 35.5% |
| Boston Globe | 10 | 33 | 30.3% |
| Orlando Sentinel | 6 | 11 | 54.5% |
| St. Paul Pioneer Press | 6 | 12 | 50.0% |
| Cleveland Plain Dealer | 5 | 20 | 25.0% |
| Chicago Tribune | 4 | 50 | 8.0% |
| Houston Chronicle | 4 | 37 | 10.8% |
| Miami Herald | 4 | 12 | 33.3% |
| San Francisco Chronicle | 4 | 16 | 25.0% |

Table 2: Top 11 newspapers by percentage articles connecting heat and climate, January 1 to July 8, 2018

| Newspaper | Climate Mentions | Heat Articles | Percentage |
|------------------------------|------------------|---------------|------------|
| Orlando Sentinel | 6 | 11 | 54.5% |
| Atlanta Journal-Constitution | 1 | 2 | 50.0% |
| St. Paul Pioneer Press | 6 | 12 | 50.0% |
| The Washington Post | 13 | 32 | 40.6% |
| Los Angeles Times | 11 | 31 | 35.5% |
| Cincinnati Enquirer | 3 | 9 | 33.3% |
| Honolulu Star-Advertiser | 1 | 3 | 33.3% |
| Indianapolis Star | 2 | 6 | 33.3% |
| Miami Herald | 4 | 12 | 33.3% |
| Seattle Times | 2 | 6 | 33.3% |
| USA Today | 3 | 9 | 33.3% |

Notably, ten of the top 50 newspapers did not mention climate change at all in the context of heat from January 1 to July 8 of this year—again, our search terms involved extreme heat, heat waves, record heat, and record temperatures—although each paper published one or more articles on heat. Two newspapers, the *Detroit Free Press* and the *Arkansas Democrat-Gazette*, published 15 and 13 heat-related articles, respectively, without mentioning climate change. The *Kansas City Star*, the

Star-Tribune (Minnesota), and the *New York Post* followed closely behind with 12, 11, and 10 heat-related articles, respectively, and no mentions of climate change. By contrast, the *Atlanta Journal-Constitution* had only two articles on heat, but one of them mentioned climate change. (See Tables 8 and 9 in the Appendix for full top-50 paper results.)

Table 3: Ten top-50 newspapers with no mentions of climate change in the context of heat, January 1 to July 8, 2018

| Newspaper | Climate Mentions | Heat Articles |
|----------------------------|------------------|---------------|
| Detroit Free Press | 0 | 15 |
| Arkansas Democrat Gazette | 0 | 13 |
| Kansas City Star | 0 | 12 |
| Star Tribune (Minneapolis) | 0 | 11 |
| New York Post | 0 | 9 |
| New York Daily News | 0 | 5 |
| Tampa Bay Times | 0 | 5 |
| East Bay Times | 0 | 4 |
| Oklahoman | 0 | 4 |
| Oregonian | 0 | 3 |

State Newspapers: Mixed Coverage

In the 13 states in which 10 or more localities broke heat records from June 27 to July 8, coverage was mixed but, on the whole, significantly worse than in the top 50 papers. Overall, there were a combined 1,730 articles on heat in 2018 to date, with 195 (11.3 percent) mentioning climate. During the heat wave, there were 673 articles, with 26 (3.9 percent) mentioning climate—a decline of 66 percent. If one considers only articles with more than 200 words, then the numbers are 190 of 1,499 (12.7 percent) for 2018 and 23 of 574 (4.0 percent) during the heat wave, a decline of 68 percent.

States with higher absolute numbers of climate mentions tend to be those with larger populations and more media outlets, such as California, Massachusetts, Pennsylvania, and New York.¹⁸ For that reason, the percentage of heat-related articles mentioning climate is likely more instructive. By that measure, the leaders were Alaska, Utah, and Vermont (Table 6). Two states, Michigan and New Hampshire, had no newspapers that mentioned climate change in connection with heat during the June-July heat event.

¹⁸ Note also that the state numbers include newspapers in the top 50 that are in those states.

Table 4: States that set 10 or more new heat records June 27 to July 8, by percentage of heat-related newspaper articles mentioning climate during the period.

| State | Climate Mentions | Heat Articles | Percentage |
|---------------|------------------|---------------|------------|
| Alaska | 1 | 6 | 16.7% |
| Utah | 1 | 6 | 16.7% |
| Vermont | 2 | 20 | 10.0% |
| Maine | 1 | 11 | 9.1% |
| Texas | 2 | 23 | 8.7% |
| West Virginia | 1 | 13 | 7.7% |
| Massachusetts | 5 | 98 | 5.1% |
| California | 5 | 101 | 5.0% |
| Colorado | 1 | 28 | 3.6% |
| Pennsylvania | 4 | 125 | 3.2% |
| New York | 3 | 190 | 1.6% |
| Michigan | 0 | 35 | 0.0% |
| New Hampshire | 0 | 17 | 0.0% |

The rate of connecting climate to heat followed a similar pattern for the year 2018 to date, although with much stronger showings overall. Again the more populous states led in absolute numbers, while Maine, Alaska, Vermont, and Utah led on the rate of climate mentions.

Table 5: States that set 10 or more new heat records June 27 to July 8, by percentage of heat-related articles mentioning climate during the year to date.

| State | Climate Mentions | Heat Articles | Percentage |
|---------------|------------------|---------------|------------|
| Maine | 9 | 37 | 24.3% |
| Alaska | 4 | 20 | 20.0% |
| Vermont | 9 | 47 | 19.1% |
| Utah | 4 | 25 | 16.0% |
| Massachusetts | 34 | 217 | 15.7% |
| California | 53 | 365 | 14.5% |
| Texas | 17 | 159 | 10.7% |
| Pennsylvania | 19 | 219 | 8.7% |
| Colorado | 9 | 111 | 8.1% |
| New Hampshire | 3 | 37 | 8.1% |
| New York | 24 | 332 | 7.2% |
| Michigan | 7 | 100 | 7.0% |
| West Virginia | 3 | 61 | 4.9% |

National Television: A Near Shutout

National television outlets delivered a near shutout on climate change when reporting on the heat wave and record-breaking temperatures of late June and early July 2018. Although 114 pieces

during that time mentioned extreme heat, record heat, record temperatures, or heat waves, just a single segment connected heat to climate change—on the CBS *Morning Show* on July 3. In the segment, a host prompts the station’s lead weather anchor, Lonnie Quinn, to “put the heat wave into perspective.” Quinn opens his segment by stating that there is “a correlation between climate change and extreme hot and extreme cold.” The segment concludes with another host asking Quinn, “have summers, in fact, gotten hotter?” “Without a doubt,” Quinn responds.¹⁹

During the year to date, the television networks had 14 climate mentions in 226 heat-related segments (6.2 percent). The 14 pieces mentioning climate include a Tucker Carlson denial segment on Fox²⁰ and a CNN segment on coral bleaching that ran five times (each of the five is included in the total of 14).²¹

Notably, ABC did not mention climate change in connection with any of its 23 heat-related segments. Also, we found no heat-related segments on MSNBC, although the Westlaw database does not appear to include the outlet’s core news programming.²²

Table 6: Major television outlet mentions of heat and climate change, June 27 to July 8, 2018

| Outlet | Climate Mentions | Heat Segments | Percentage |
|--------|------------------|---------------|------------|
| ABC | 0 | 6 | 0.0% |
| CBS | 1 | 40 | 2.5% |
| CNN | 0 | 32 | 0.0% |
| FOX | 0 | 1 | 0.0% |
| MSNBC | 0 | 0 | NA |
| NBC | 0 | 35 | 0.0% |
| Totals | 1 | 114 | 0.9% |

Beyond the June-July heat wave, NBC’s *Today Show* provides a notable example of connecting climate change and extreme heat. In a June 22 segment on the start of summer, weather forecaster Al Roker discusses a number of potential dangers, from flooding to extreme heat, while properly identifying the role of climate change in increasing the volatility of summer weather.²³

¹⁹ “Chief Weathercaster Lonnie Quinn put this heat wave in perspective,” *CBS This Morning*, July 3, 2018.

²⁰ *Tucker Carlson Tonight*, Fox News Network, Jan. 6, 2018.

²¹ See, e.g., “Macron Digs at Trump Ahead of G-7 Summit,” *CNN Newsroom*, July 8, 2018.

²² The Westlaw database includes the following MSNBC shows: *All In with Chris Hayes*, *Morning Joe*, *MTP Daily*, *The 11th Hour*, *The Beat*, *The Rachel Maddow Show*, and at least some interviews labeled “Special.” It appears not to include: any MSNBC Live programs, *Velshi & Ruhle*, *Andrea Mitchell Reports*, *Deadline: White House*, or *The Last Word with Lawrence O’Donnell*.

²³ “Remembering some important summer hazards,” *Today Show*, NBC, June 22, 2018.

Table 7: Major broadcast television mentions of heat and climate change, January 1 to July 8, 2018

| Outlet | Climate Mentions | Heat Segments | Percentage |
|--------|------------------|---------------|------------|
| ABC | 0 | 23 | 0.0% |
| CBS | 2 | 51 | 3.9% |
| CNN* | 10 | 77 | 13.0% |
| FOX** | 1 | 3 | 33.3% |
| MSNBC | 0 | 0 | NA |
| NBC | 1 | 72 | 1.4% |
| Totals | 14 | 226 | 6.2% |

* The CNN numbers include a segment on coral bleaching that ran five times.

** The Fox segment that mentioned climate is an instance of denial.

Qualitative Analysis: Missed Opportunities

One bright spot in this analysis is that we found virtually no climate denial in connection with heat-related reporting this year. There was none at all during the June-July heat event, and only one arguable example the entire year to date: a January 2018 Tucker Carlson segment which was responding to a cold snap, not a heat event.²⁴ It appears the deniers know better than to take on extreme or record-setting heat, some of the most obvious, and unfortunately now-persistent, weather-related signs of climate change. On the other hand, the degree of silence about climate change in the context of extreme heat is striking, particularly in light of the absence of denial.

We identified a number of articles that could be viewed as “near misses.” These pieces comment on the June-July heat event in climate-salient ways, for example, by comparing the current temperatures to historic averages, or identifying the heat event as a warming trend for the relevant location. Ultimately, however, they fail to make the connection to climate change.

One example is an article in *The Cincinnati Enquirer* by Sarah Brookbank on July 6. The piece asks the right question but provides readers only a partial answer. Titled “Why is it so hot? Blame the heat dome,” the article concludes that a “heat dome,” or a large area of high pressure, was responsible for abnormally hot weather in Cincinnati over the Fourth of July holiday. The article notes record temperatures and trends beyond that time period, and therefore beyond what was attributable to the then-current heat dome effect, and it relies in part on a *Washington Post* article that plainly discusses the relevance of global warming. Despite this, the *Enquirer* piece fails to discuss climate.²⁵

²⁴ Carlson attempts to mock climate science by deriding the notion that diverse extreme weather phenomena including “low temperatures,” “heat waves,” hurricanes, and droughts are all “proof” of climate change. *Tucker Carlson Tonight*, Fox News Network, Jan. 6, 2018.

²⁵ Sarah Brookbank, “Cincinnati weather: Why is it so hot? Blame the heat dome,” *Cincinnati Enquirer*, July 5, 2018. <https://pubc.it/2OjshQn>.

Another example comes from the *Indianapolis Star*. In response to a record-breaking May, reporter Justin L. Mack wrote a June 4 article titled, “After Indy’s warmest May ever, June’s forecast shows no signs of cooling off.” The article uses 600 words to describe abnormally high temperatures in May and June, emphasizing they are well out of the ordinary, but fails to connect the trend of anomalies to a warming planet. It includes the following, illustrative passage:

“Indianapolis broke several records for the month as a result,” said the NWS statement. “The average temperature of 72.6 degrees obliterated the previous warmest May on record by nearly 2 degrees, occurring back in May 1896. Twenty-five days during the month experienced highs at or above 80 degrees, also a new record.”

“All 31 days during the month would end up above normal, the first time that had occurred since July 2012, the hottest month on record in the city’s history.”

The month also included Indy’s hottest ever recorded Mother’s Day at 88 degrees, and Indy’s hottest ever recorded Memorial Day at 95 degrees, according to the National Weather Service.²⁶

Qualitative Analysis: Strong Reporting

Although outlets generally have done a poor job connecting extreme heat to climate change in 2018, and particularly during the June-July heat event, a number of individual reporters have excelled in telling the whole story on heat in multiple ways.

Citing Climate Scientists

The long-term trends of more frequent and intense weather, such as heat waves and less cooling in general,²⁷ are signs that human greenhouse gas emissions are contributing to global warming and therefore making these types of events increasingly likely. Scientists overwhelmingly echo this consensus.²⁸ Where possible, media should consult climate experts when drawing conclusions about how local weather events fit into a broader trend and look to scientist about how to communicate this phenomenon to the public.

Based on our review, 24.8 percent of the articles in the top 50 papers and 26.1 percent of state newspaper articles mentioning climate change or global warming also cited climate experts. The following are examples:

²⁶ Justin L. Mack, “May was Indy’s warmest on record; here’s what to expect in June,” *Indianapolis Star*, June 3, 2018. <https://pubc.it/2OfulsK>.

²⁷ Kendra Pierre-Louis and Nadja Popovich, “nights are warming faster than days. Here’s why that’s dangerous,” *The New York Times*, July 11, 2018. <https://pubc.it/2uLEyFh>.

²⁸ See, e.g., “Commonwealth Academies of Science Consensus Statement on Climate Change,” *The Royal Society*, Mar. 12, 2018. <https://pubc.it/2LRzEwQ>.

- “Heat waves in recent years have become more intense, a consequence of global warming, raising the possibility of ever-deadlier fire seasons . . . The overall trend over decades to more intense and more frequent heat waves is definitely a signal of global warming.” —*The New York Times*, quoting UCLA climate scientist David Swain.²⁹
- “... speaking scientifically, it has almost certainly been at least 291 consecutive months of global temperatures above the 20th century mean, and probably much longer, with 399 or 401 months being the best estimates. If you believe the NOAA estimate, it’s 401 months. What this means is that average global temperatures have increased so much that not even natural variability can produce a month colder than the 20th century average, and hasn’t been able to do so for some time. The global warming signal is well above the noise level. At this rate, about the only thing strong enough to cancel out global warming for a month would be a volcanic eruption much stronger than Krakatau.” —*Austin American-Statesman*, quoting Texas A&M University climatologist John Nielsen-Gammon.
- “The fact that 2017 was so warm in a year without El Nino should make very clear how rapidly Earth’s global temperature is increasing.” —*Los Angeles Times*, quoting Stanford University climate scientist Noah Diffenbaugh.³⁰
- “It’s unlikely we’ll ever see temperatures as cool as we had back before 2014 again.” —*The Washington Post*, quoting Berkeley Earth climate scientist Zeke Hausfather.³¹
- “In the context of global warming, we are seeing extreme events.” —*The New York Times*, quoting Massimiliano Fazzini, University of Camerino and Ferrara professor of climatology.³²

Describing the Relationship Between Climate and Weather Accurately

There still appears to be widespread misunderstanding in the media and the public regarding the distinction between climate and weather, exemplified by the Tucker Carlson piece discussed above and by President Donald Trump’s sarcastic tweet during a cold snap: “In the East, it could be the COLDEST New Year’s Eve on record. Perhaps we could use a little bit of that good old Global Warming . . .”³³ In the comment sections of newspaper websites, we commonly found claims that climate change cannot be real because the temperatures were recently cold somewhere.

²⁹ Tim Arango, “Record heat in Southern California, and an ominous start to wildfire season,” *The New York Times*, July 7, 2018. <https://pubc.it/2uQc79g>.

³⁰ Amina Khan, “2017 was one of the three hottest years on record, NASA and NOAA scientists say,” *Los Angeles Times*, Jan. 18, 2018. <https://pubc.it/2uN168L>.

³¹ Chris Mooney, “The planet just had its hottest 4 years in recorded history. Trump is dismantling efforts to fight climate change,” *Washington Post*, Jan. 18, 2018. <https://pubc.it/2uQwzHQ>.

³² Elisabetta Povoledo, “Snow Falls in Rome, and the Eternal City Takes a Holiday,” *New York Times*, Feb. 26, 2018. <https://pubc.it/2Og1WTr>.

³³ Brian Resnick, “Trump thinks climate change isn’t real because it’s cold out. This map proves him wrong,” *Vox*, Dec. 29 2017. <https://pubc.it/2Og22dL>.

According to NOAA, weather reflects short-term conditions of the atmosphere while climate is the average daily weather for an extended period of time at a certain location.³⁴ In other words, weather is an event and climate change is a long-term trend.

Two articles in particular address these concepts well. Lindsay Gingrich of the *Petoskey News-Review* in Michigan draws from NOAA and an interview with a local National Weather Service meteorologist. She informs readers that “Climate is the average of the weather” and “Climate change is what is happening with changes in daily weather over a longer period of time.”³⁵ The editorial board of the *San Antonio Express-News* responded to political candidates citing “cold weather” to express skepticism about climate change by stating, “Weather is not the same as climate change. One is an event—a cold snap, a heat wave, a mild summer, a massive storm. The other is the broader trend.”³⁶

In general, good climate reporting can relate current weather to climate by considering how the recent temperatures compare to historic averages, while noting that global warming is also altering the averages. It also can discuss potential signals of climate change, including heat waves that:

- are especially severe;
- are longer than usual;
- are earlier or later in the season than usual;
- raise the total number of hotter-than-average days for the year above the long-term average for the year to date;
- involve unusually hot nights; or
- break records.

For example, while reporting on the heat wave that baked Southern California in early July, *New York Times*, reporter Tim Arango provides historical context:

The temperature spike broke with historical weather patterns. While much of the Northern Hemisphere suffers through its hottest days in the summer months—June, July, August—Southern California’s hottest days are often in September or October.³⁷

In response to the first 100-degree day in Austin, *Austin American-Statesman* reporter Roberto Villalpando explains how an early dangerous day, falling on June 1st, relates to a climate-change trend:

³⁴ NOAA, “What’s the difference between weather and climate?” Mar. 23, 2018. <https://pubc.it/2Oesbtg>.

³⁵ Lindsay Gingrich, “Climate change vs. weather, there’s a difference,” *Petoskey News-Review*, Jan. 18, 2018. <https://pubc.it/2uN8DV4>.

³⁶ *Express-News* Editorial Board, “Weather is different than climate,” *San Antonio Express-News*, Jan. 25, 2018. <https://pubc.it/2uNTeni>.

³⁷ Tim Arango, “Record heat in Southern California, and an ominous start to wildfire season,” *The New York Times*, July 7, 2018. <https://pubc.it/2uQc79g>.

Based on National Weather Service data going back to the 1890s, Austin normally sees its first 100 degree day around July 10. But if you look at just the numbers since 1998, as the effects of climate change have become more apparent, the first 100 degree day arrives a little earlier, around June 28.³⁸

Connecting Global Warming to Local Weather

Adapting national climate news for local audiences is an effective way to engage readers on the climate crisis. A handful of local papers, covered in this review, provide models of how to localize national climate stories.

In response to NOAA's "Assessing U.S. Climate in 2017" report, the *Alaska Dispatch News's* Annie Zak published an article examining the impact of the U.S. warming trend on the state. She quotes Rick Thoman of the National Weather Service: "Alaska, of course, being the only Arctic part of the U.S. . . . it's often referred to as polar amplification, that climate is warming much more rapidly at high latitudes," Thoman wrote. "We are the U.S.'s canary in that coal mine."³⁹

The Texas Observer's Naveena Sadasivam connected aspects of NOAA's report to recent Texas extreme weather events:

According to NOAA, there were 16 weather and climate disasters nationally, which cost more than \$300 billion and resulted in the deaths of 362 people . Hurricane Harvey alone cost \$125 billion and resulted in 89 deaths. Similarly, about 9,300 wildfires in Texas damaged more than 700,000 acres and destroyed 49 homes.⁴⁰

Based on NOAA data, the *Associated Press* did an in-depth analysis on warming trends in the U.S. over the past 30 years or since James Hanson initial testimony warning of global warming in 1988. The piece, which appeared on June 18, prompted the *Times Union* in Albany, NY, to publish a June 20 article explaining what nearly 2 degrees of warming means for New Yorkers. The reporter, Brian Nearing, discusses multiple harmful impacts, including the spread of tick-borne illness:

To an average person, rising temperatures over the years might barely seem noticeable. Statewide, the average year-round temperature since 1988 has been almost 46 degrees, up from a 44.4 degree average from 1901 to 1960, according to records compiled by the Associated Press.

In the Hudson Valley, including the Capital Region, the average temperature for that same period rose from almost 47 degrees to about 48.8 degrees.

³⁸ Roberto Villalpando, "FORECAST: Austin could get first 100-degree day of 2018, heat index of 109," *Statesman*, June 1, 2018. <https://pubc.it/2uPoRN6>.

³⁹ Annie Zak, "Alaska just had its warmest December on record," *Anchorage Daily News*, Jan. 8, 2018. <https://pubc.it/2uNoHpC>.

⁴⁰ Naveena Sadasivam, "2017 was Texas' second-warmest year on record," *The Texas Observer*, Jan. 24, 2018. <https://pubc.it/2OgzBwh>.

That might not seem like much, until you consider facts like this: The ticks that carry Lyme disease and other illnesses rapidly expanding through the state become active once it hits 45 degrees, so earlier springs and later falls will extend both tick ranges and seasons.⁴¹

Prompted by a *Washington Post* online article that discusses notable records from the global June-July 2018 heat event and notes that Burlington, VT, set its all-time warmest low temperature of 80 degrees on July 2, 2018,⁴² *The Burlington Free Press* published a piece that places the city's record recent temperatures within historic and global context. It notes, for example, that "The previous so-called record high low temperature for any date in Burlington's 135 years of weather record-keeping was 78 degrees" and that "Vermonters are hardly alone in suffering from the heat. The Washington Post's Capital Weather Gang writers report record-high temperatures are being set around the globe."⁴³

Bringing It Home

Exceptional climate reporting not only connects global warming to local extreme heat events, but discusses how climate change is impacting the community. This reporting puts a local, human face on a sometimes abstract, global phenomenon, providing readers with a deeper understanding of what is at risk, who is most vulnerable, and how the need for action is urgent.

Philadelphia Inquirer reporter Frank Kummer offers up one of the best pieces on the local impact of climate-fueled heat within the scope of this report. Timed with the city's first major heat wave of the summer, Kummer dedicates over 1,000 words to the disproportionate impact of extreme heat on Philadelphia's urban minority, as well as the organizations scrambling to make these hard-hit communities more resilient in the face of increasing heat. It includes the following passage:

City officials fear climate change is exacerbating the problem. Recent data show that Philadelphia's average temperature has risen 2 degrees Fahrenheit in the last 30 years. Temperature rise will have a disproportionate impact on poorer and minority residents, given that the warmest neighborhoods also are the most economically stressed and majority black or Hispanic.

A city report on the potential impact of climate change says Philadelphia "may experience four to 10 times as many days per year above 95 degrees, and as many as 16 days a year above 100 degrees by the end of the century, up from the 1950–1999 average of less than 1. More of these hot days may arrive together as heat

⁴¹ Brian Nearing, "As New York warms, less snow, more rain, floods, higher lakes and seas," *Times Union*, June 24, 2018. <https://pubc.it/2uR0rD8>.

⁴² Jason Samenow, "Red-hot planet: All-time heat records have been set all over the world during the past week." *The Washington Post*, July 5, 2018. <https://pubc.it/2uNqKtO>.

⁴³ "Here's what you need to know about Burlington's historic heat wave," *Burlington Free Press*, July 4, 2018. <https://pubc.it/2NMcgkO>.

waves, increasing the risk of residents experiencing heat-related health problems such as dehydration, heat exhaustion, and heat stroke.”⁴⁴

The Dallas Morning News’s Anna Kuchment also delivers one of the best climate articles of the year. Prompted by a record year of weather and climate disasters, Kuchment spends 1,900 words laying bare the economic and personal costs in store for Texans if climate change goes unchecked. One illustrative passage states:

Longer droughts and more extreme rainstorms will pose a challenge for those who manage drinking water supplies, those who raise cattle, and those who oversee our roads and railways. The changes may also have unexpected effects on people’s daily lives, including jobs. Intense heat can imperil cars and airplanes, evaporate drinking water supplies, and halt outdoor labor such as farm work and construction.⁴⁵

Pulled from the Wires

News outlets that have an appetite for informing their audience about the most important issues of our time, but have too few reporters or other resources to do the subjects justice, can level the playing field on climate change by reprinting or repackaging content from the news wires or other outlets.

Our analysis found that 20 percent of articles mentioning climate change were reprinted or repackaged from a newswire service or a larger paper like *The New York Times* or *The Washington Post*. Most of these pieces were from the *Associated Press* (AP).

Twenty-three percent or 17 of 74 of the stories mentioning climate change from the top 50 news outlets were attributed to the *Associated Press*. Nearly 14 percent (11 of 80) climate stories published by state papers used *Associated Press* content.

The *Associated Press*, with over 3,000 employees, is a newswire service that sends its stories to more than 14,000 newsrooms globally. In 2016, AP announced a significant expansion of its environmental coverage with the formation of a dedicated team to report on global environmental issues, including climate change. The company’s vice president for U.S. News said of the decision, “There is no single issue that affects as many as the future of the globe itself.”⁴⁶

⁴⁴ Frank Kummer, “Weather warning: These Philadelphia neighborhoods get the hottest in a heat wave,” *The Inquirer Daily News*, June 29, 2018. <https://pubc.it/2LF3DLA>.

⁴⁵ Anna Kuchment, “Climate change to bring North Texas longer droughts, heavy rains, 120-degree temps within 25 years,” *The Dallas Morning News*, Feb. 15, 2018. <https://pubc.it/2NHemT2>.

⁴⁶ “AP expanding environmental coverage with global teamwork,” *Associated Press*, Sept. 12, 2016. <https://pubc.it/2NN9Ja6>.

Conclusion

Extreme or record-setting heat is perhaps the clearest and most obvious signal of climate change in people's daily lives. It is also the weather event most readily attributable to climate change, as global warming has contributed to 82 percent of global record-hot days by making them more likely or more severe.⁴⁷ This analysis finds that during extreme heat event that scorched much of the U.S. from June 27 to July 8, one could scarcely hear a whisper of climate change from the media. Most Americans likely heard only climate silence. Even more striking was that media outlets were significantly less likely to connect climate to heat when the issues were most salient—during the heat wave—than at other times.

This review identified some notable exceptions and models how best to cover climate in the context of extreme heat events. Overall, however, U.S. news outlets continue to tell only half the story. These exceptions need to become the norm if the public is going to wake from its slumber on climate change in time to take the bold action we urgently need to avoid catastrophic harm, and possibly even an existential threat to the U.S., later this century. A recent op-ed in the *Los Angeles Times* summarizes both the problem of poor climate coverage in the media and the solution in ten words: The science is clear. Journalists need to start using it.⁴⁸

⁴⁷ Climate Signals, "Extreme heat and heat waves," July 25, 2018. <https://pubc.it/2KfLinA>.

⁴⁸ Leah C. Stokes, "Climate change is behind the global heat wave. Why won't the media say it?" *Los Angeles Times*, July 15, 2018. <https://pubc.it/2LQNSy1>.

Appendix

Table 8: Climate mentions and heat-related articles by state, January 1 to July 8, 2018

| Newspaper | Climate Mentions | Heat Articles | Percentage |
|----------------------------------|------------------|---------------|------------|
| Arizona Republic | 1 | 4 | 25.0% |
| Arkansas Democrat Gazette | 0 | 13 | 0.0% |
| Atlanta Journal-Constitution | 1 | 2 | 50.0% |
| Baltimore Sun (MD) | 2 | 12 | 16.7% |
| Boston Globe | 10 | 33 | 30.3% |
| Buffalo News (NY) | 3 | 20 | 15.0% |
| Chicago Sun Times (IL) | 1 | 21 | 4.8% |
| Chicago Tribune | 4 | 50 | 8.0% |
| Cincinnati Enquirer | 3 | 9 | 33.3% |
| Cleveland Plain Dealer | 5 | 20 | 25.0% |
| Columbus Dispatch (OH) | 1 | 9 | 11.1% |
| Dallas Morning News, The | 2 | 7 | 28.6% |
| Denver Post (CO) | 1 | 36 | 2.8% |
| Detroit Free Press | 0 | 15 | 0.0% |
| East Bay Times | 0 | 4 | 0.0% |
| Honolulu Star-Advertiser | 1 | 3 | 33.3% |
| Houston Chronicle | 4 | 37 | 10.8% |
| Indianapolis Star | 2 | 6 | 33.3% |
| Kansas City Star | 0 | 12 | 0.0% |
| Las Vegas Review-Journal (NV) | 1 | 16 | 6.3% |
| Los Angeles Times | 11 | 31 | 35.5% |
| Miami Herald | 4 | 12 | 33.3% |
| Milwaukee Journal Sentinel (WI) | 1 | 16 | 6.3% |
| New Orleans Times Picayune | 1 | 4 | 25.0% |
| New York Daily News | 0 | 5 | 0.0% |
| New York Post | 0 | 9 | 0.0% |
| Newsday | 1 | 17 | 5.9% |
| Oklahoman | 0 | 4 | 0.0% |
| Omaha World-Herald (NE) | 1 | 10 | 10.0% |
| Orange County Register, The (CA) | 1 | 17 | 5.9% |
| Oregonian | 0 | 3 | 0.0% |
| Orlando Sentinel | 6 | 11 | 54.5% |
| Philadelphia Inquirer (PA) | 3 | 18 | 16.7% |

| | | | |
|------------------------------------|-----|-----|-------|
| Pittsburgh Post-Gazette (PA) | 2 | 12 | 16.7% |
| Sacramento Bee | 3 | 11 | 27.3% |
| San Diego Union-Tribune | 3 | 26 | 11.5% |
| San Francisco Chronicle | 4 | 16 | 25.0% |
| San Jose Mercury News (CA) | 3 | 13 | 23.1% |
| Seattle Times | 2 | 6 | 33.3% |
| St. Louis Post-Dispatch (MO) | 2 | 15 | 13.3% |
| St. Paul Pioneer Press | 6 | 12 | 50.0% |
| Star Tribune (Minneapolis) | 0 | 11 | 0.0% |
| Star-Ledger, The (Newark, NJ) | 2 | 11 | 18.2% |
| Sun Sentinel, Fort Lauderdale, FL | 2 | 14 | 14.3% |
| Tampa Bay Times | 0 | 5 | 0.0% |
| The New York Times | 14 | 58 | 24.1% |
| The Wall Street Journal | 3 | 11 | 27.3% |
| USA Today | 3 | 9 | 33.3% |
| Virginian-Pilot, The (Norfolk, VA) | 1 | 12 | 8.3% |
| The Washington Post | 13 | 32 | 40.6% |
| Total | 134 | 760 | 17.6% |

Table 9: Climate mentions and heat-related articles by state, June 27 to July 8, 2018

| Newspaper | Climate Mentions | Heat Articles | Percentage |
|----------------------------------|------------------|---------------|------------|
| Arizona Republic | 0 | 0 | NA |
| Arkansas Democrat Gazette | 0 | 1 | 0.0% |
| Atlanta Journal-Constitution | 0 | 0 | NA |
| Baltimore Sun (MD) | 1 | 5 | 33.3% |
| Boston Globe | 2 | 12 | 22.2% |
| Buffalo News (NY) | 1 | 13 | 12.5% |
| Chicago Sun Times (IL) | 0 | 6 | 0.0% |
| Chicago Tribune | 2 | 15 | 20.0% |
| Cincinnati Enquirer | 0 | 1 | 0.0% |
| Cleveland Plain Dealer | 0 | 5 | 0.0% |
| Columbus Dispatch (OH) | 0 | 1 | 0.0% |
| Dallas Morning News, The | 0 | 1 | 0.0% |
| Denver Post (CO) | 0 | 8 | 0.0% |
| Detroit Free Press | 0 | 3 | 0.0% |
| East Bay Times | 0 | 1 | 0.0% |
| Honolulu Star-Advertiser | 0 | 0 | NA |
| Houston Chronicle | 0 | 3 | 0.0% |
| Indianapolis Star | 0 | 0 | NA |
| Kansas City Star | 0 | 2 | 0.0% |
| Las Vegas Review-Journal (NV) | 0 | 3 | 0.0% |
| Los Angeles Times | 0 | 9 | 0.0% |
| Miami Herald | 0 | 0 | NA |
| Milwaukee Journal Sentinel (WI) | 0 | 3 | 0.0% |
| New Orleans Times Picayune | 0 | 1 | 0.0% |
| New York Daily News | 0 | 0 | NA |
| New York Post | 0 | 5 | 0.0% |
| Newsday | 1 | 9 | 12.5% |
| Oklahoman | 0 | 0 | NA |
| Omaha World-Herald (NE) | 0 | 0 | NA |
| Orange County Register, The (CA) | 0 | 10 | 0.0% |
| Oregonian | 0 | 0 | NA |
| Orlando Sentinel | 2 | 4 | 50.0% |
| Philadelphia Inquirer (PA) | 1 | 14 | 7.7% |
| Pittsburgh Post-Gazette (PA) | 0 | 4 | 0.0% |
| Sacramento Bee | 0 | 0 | NA |
| San Diego Union-Tribune | 2 | 17 | 11.8% |

| | | | |
|------------------------------------|----|-----|--------|
| San Francisco Chronicle | 1 | 2 | 50.0% |
| San Jose Mercury News (CA) | 0 | 2 | 0.0% |
| Seattle Times | 0 | 1 | 0.0% |
| St. Louis Post-Dispatch (MO) | 1 | 1 | 100.0% |
| St. Paul Pioneer Press | 0 | 1 | 0.0% |
| Star Tribune (Minneapolis) | 0 | 3 | 0.0% |
| Star-Ledger, The (Newark, NJ) | 1 | 10 | 10.0% |
| Sun Sentinel, Fort Lauderdale, FL | 2 | 3 | 66.7% |
| Tampa Bay Times | 0 | 0 | NA |
| The New York Times | 5 | 15 | 33.3% |
| The Wall Street Journal | 0 | 1 | 0.0% |
| USA Today | 0 | 2 | 0.0% |
| Virginian-Pilot, The (Norfolk, VA) | 0 | 0 | NA |
| The Washington Post | 1 | 7 | 0.0% |
| Total | 23 | 204 | 12.1% |