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Introduction

> "The more clearly we can focus our attention on the wonders and realities of the universe about us, the less taste we shall have for destruction."
>
> —Rachel Carson, 1954

Waning sunlight filtered through the windows of the Cronkite Newsroom. Students had just returned for the fall semester at Arizona State University's Walter Cronkite School of Journalism and Mass Communication. They were braving 100-plus-degree days and adjusting to a semester-long course where they would learn to report, edit, and produce stories for TV, digital, audio, and social media in an actual newsroom. Warm light bounced off now-empty desks, backlighting one of my students. "Can I ask you a question?" she said. I pushed my chair back and invited her to join me. "What's up?"

I listened as Autriya shared her concerns about the semester. How could she get started building a beat on climate change? Did I have any resources that could help her get started? What stories might I, her editor, be interested in?

Each semester, I had a new group of students. They pitched me story ideas. We discussed. I said "no" to a lot, but some ideas I approved. I worked closely with my students on those ideas, which covered an array of topics: water, renewable energy, agriculture, extreme weather, climate science, and even sustainable fashion. Hardly any of my students came with a science background. A few were double majoring in journalism and meteorology. But most were like Autriya, interested in environmental issues like climate change and learning to develop the beat quickly.

Every semester, my students showed up brimming with questions, especially about human-driven climate change. Those studying to be meteorologists wanted to learn how to incorporate climate change into their broadcast weather segments. Others felt compelled to work on climate change but weren't sure whether journalism was the right path for them. Some just needed class credit to graduate, which meant getting a crash course from me on science, climate change, and environmental issues to pass.

Most of my students understood that Earth's climate had warmed. But they were less sure about why and about the science of climate change.

They asked probing questions: What happens if the Earth continues to warm? How confident are scientists that climate change is happening? What solutions exist to address climate change? Why is climate change so politically divisive? How could they develop a beat on climate change? Doesn't climate change mean some people are being hurt more than others?

They had questions about science, too: What exactly is the scientific method? How do you read and interpret studies? Where do you find and verify true science experts? How do you prepare for an interview with a scientist? My students' questions made me realize how complicated reporting on human-caused climate change can be, especially when someone is early in their journalism career. These conversations sparked the idea for the book you now hold in your hands.

I related to their questions and our discussions because early in my career I asked many of the same questions. I didn't get my degree in journalism. I studied political science and international relations. My job at Boise State Public Radio during college as a general assignment reporter opened the world of audio storytelling. That's where I gravitated toward environmental policy stories in Idaho's legislature, forest health, wildfires, public lands, and the debate over how to save endangered salmon.

I learned environmental reporting by doing. I wished I had a mentor or guide or an accessible guidebook for reporting on environmental issues, especially climate change. *Hot Takes: Every Journalist's Guide to Covering Climate Change* is meant to be that guidebook. It's born from my years of reporting on environmental issues, editing, leading public radio newsrooms, and working as NPR's senior supervising climate editor.

Covering human-driven climate change is becoming increasingly complex. I have learned through the years that it's a challenge not just for students and early career journalists but for veteran reporters, too. I have repeatedly seen reporters at every stage in their career challenged to adapt their skills and storytelling methods to this complicated topic.

Hot Takes is grounded in the recognition that climate change is now an essential element in many of the stories journalists must report. I believe every reporter is now, to some degree, a climate reporter. This book equips and prepares journalists at any stage in their career to recognize and make these climate connections, get the science and policy right, detect and debunk misinformation, avoid false equivalencies and doomist story framing, and incorporate rigorous reporting on solutions and responses

that give audiences agency, all while practicing self-care for what can be a controversial and even dangerous beat.

To navigate the intersectionality of human-caused climate change, reporters need to understand and unpack what can be a complex narrative: There's historical context. Decades of delayed climate action. Immense issues of global inequality. The gravity of melting glaciers. Wildlife on the edge of extinction. Deforestation in the name of development and progress. Wildfires that force thousands to flee their homes every year. The growing human toll from climate-related catastrophes. The inundation of coastlines from rising waters. Inland flooding in the wake of cataclysmic storms.

Climate-driven calamities are happening alarmingly fast. Candid reporting on such realities is enough to elicit a sense of dread. This book describes ways that climate journalists can effectively report the truth about these harms without stoking doomism.

Another narrative has also emerged as more journalists report on our warming world: That is one of hope and possibility embedded in the harsh facts of science. The world has a solution: draw down planet-warming pollution rapidly. What we do today matters for future generations to come.

I see journalism's role as twofold in covering climate change: Inform and instill agency in people to see what's possible beyond the doom and gloom headlines and do what journalists do best—hold the powerful to account. The magnitude of this moment demands that journalists find the fortitude to break free from traditional storytelling methods and embrace new storytelling formats that help us all see the way forward.

The fast-paced nature of information sharing via social media and a crowded media landscape make climate reporting challenging. The myths generated by climate deniers, industry polluters, and some politicians litter the reporting journey with pitfalls everywhere. How can reporters best navigate these misinformation traps? How do journalists make the necessary climate connections in stories when there's so much noise and misinformation?

From my time teaching at Arizona State University to my role as a climate editor at NPR, I have had a front-row seat to the transformation of reporting on climate change. That transformation has rapidly evolved in recent years as more news organizations, including NPR, recognize the importance of covering our warming world. Newsroom leadership increasingly recognizes that stories about climate change can't be confined to a desk or beat. Rather, climate transcends any one beat in the newsroom.

Climate journalism is here to stay and rapidly evolving as newsrooms finally recognize the need to help inform people about the climate crisis. I write *finally* because it wasn't that long ago that being an environment reporter meant being mainly on your own in the newsroom. I remember those days. Now, journalists specialize in subsets within the climate beat: health, energy, social inequities, and the green energy transition. That's a signal that climate journalism isn't going anywhere. Newsrooms have dedicated teams and desks to cover the most important and pressing story of our time.

Hot Takes has taken place against this backdrop. The journalists, science communicators, and researchers I've interviewed for this book, combined with my own experience as a reporter and editor, have shaped the pages that follow. I have tried to write these chapters to withstand time and the changes ahead.

Policy developments, climate litigation, greenwashing, misinformation, and disinformation happen so consistently that any book struggles to remain relevant. Still, some things remain true. The majority of scientists agree unequivocally that climate change is happening, it is caused by humans, and it results primarily from the burning of fossil fuels. Research continues, though, to better understand the complexity of a warmer world, including the economic toll of climate change on people, the effects of wildfire smoke on people's health, and the influence of climate change on extreme weather. Geo-engineered projects continue to pop up, promising technological solutions to climate change. Misinformation and disinformation campaigns are just as prominent today as they were decades ago.

Hot Takes tackles all these aspects of reporting on our warming world. The book is divided into three sections. The first part explains how we have arrived at this moment with human-caused climate change. The second section examines how climate reporting narratives can be framed to engage people. The final section looks at emerging trends, including how journalists can report on extreme weather while taking care of themselves. Along the way, readers will find hot takes: key takeaways, facts, and reporting tips that make the reporting journey easier.

Journalism needs a new framework for how we report climate stories. Reporters must go beyond headlines that instill a sense of doom and dread and instead help us understand the implications of human-caused climate change and what's possible. We need moments of joy that come through reading about what communities, organizations, governments, and maybe even you are doing in your own life to respond to a warmer world.

Such a framework involves reimagining traditional reporting methods and asking what our role as journalists is in reporting on climate. It means abandoning a failed formula of reporting "both sides" and instead embarking on an equitable approach that allows for multiple perspectives and voices.

We must also practice the investigative ideals of journalism that have long given this profession its place as the fourth estate, a watchdog that holds the powerful accountable. We need this more than ever in an era of pervasive and crippling false information that threatens to erode the foundation of democratic nations.

Wherever this book finds you in your journalism journey, I hope its pages help you report on the most consequential story of our time. The future depends on climate journalism that informs and inspires communities globally to realize a climate future that is greener, brighter, and cleaner than what centuries of planet-warming pollution have created for us today.

CHAPTER 1

An Evolution in Climate Coverage

> "The planet does not need more successful people. The planet desperately needs more peacemakers, healers, restorers, storytellers and lovers of all kinds."
>
> —Dalai Lama

More than 170 cyclists roll off the start line at the 2024 Tour de France opening stage in Florence, Italy. They swarm through the city streets against a backdrop of stone buildings and cultural history, pedaling easily until they reach the city limits. Then the attacks start, one after the other, as teams position themselves for the hilly 128-mile race ahead.[1] It's nearly 100°F, and the pack of riders has strung out along the road—a blur of color streaking through the Italian countryside. The road pitches up for the day's first climb, and several riders break away from the main group.

But British cyclist Mark Cavendish isn't with them. He's one of the best sprinters in the world and completed the Tour de France sixteen times, winning thirty-four stages. The stage wins have happened on flat roads where he conserves his energy, supported by his team, only to strike like a cheetah in the final moments of a stage to secure the win. A thirty-fifth stage win would be historic. He'd break cycling legend Eddy Merckx's long-held record during this three-week race.[2] But he's struggling. The hilly course doesn't suit his skills, and it's hot.

A teammate squirts Cavendish's neck with water and puts ice down his jersey. He's dizzy. He stops along the road and throws up. He remounts his bike. Cavendish isn't going to give up on the first day of the Tour. But he's nearly last as he slowly grinds up the first climb, with 100 miles left to go.

Cavendish knows if he doesn't make it to the city of Rimini close enough to the winner, he'll be disqualified, his dream of breaking the stage-win record dashed.

He's not the only professional cyclist to struggle in the hot, humid temperatures. Riders chug water bottle after water bottle. They pour water on each other, anything to stay cool.

Cavendish will eventually make it to the finish line in time to start the next day's stage. After the race, Cavendish's herculean effort will make the sports headlines, but the cause of his suffering will not.

On a different stage, a fashion model steps confidently into a vast domed room at Espace Niemeyer in Paris. Her steps are in sync with synthesized beats as a booming voice calls out, "In fashion, mushrooms are the future." The woman moves deftly around the circular stage, expressionless, her near-floor-length gauzy green jacket billowing in her wake.

It's the spring 2022 ready-to-wear collection by designer Stella McCartney on display during Paris Fashion Week. Fifty different looks, all inspired by mushrooms, are on display, from bodysuits to cargo pants with the sides slit open. Some of the dresses are inspired by the underbelly of a portobello mushroom. The story headlines in fashion magazines and major media outlets played up the mushroom-inspired collection: "Stella McCartney Does Mushrooms in Paris," "Stella McCartney Channels Mushrooms in Trippy Paris Show," "Stella McCartney's Mushrooms Are the Future."[3–5] But there's also an untold story: Why mushrooms?

A continent away, shoppers peruse the vegetables and fruits at a neighborhood grocery store in Phoenix, Arizona. Some glance at the large avocados and then push their carts along. One avocado costs more than three dollars. Grocery bills continue to escalate for food staples, including bread, rice, and olive oil. Questions arise as to why grocery bills have climbed nearly 25 percent over three years when inflation has been dropping.[6] National and local news outlets regularly report the uptick in grocery prices. What's missing from those stories is what's driving food costs higher.

These are three hot takes on seemingly unrelated topics: sports, culture, and economy. Yet all three have something in common, an unreported story behind the headline: human-caused climate change. Mark Cavendish's horrible day on the bike at the start of the Tour de France spotlights increasingly warm conditions for the famous cycling race that finishes in Paris. Pro cyclists must learn new ways to manage excessive heat, from cooling vests and ice packs to race officials spraying water on roads to keep asphalt from melting ahead of the racers. That's a sports story *and* a climate story.

Stella McCartney's 2022 spring collection may have been inspired by mushrooms, but some items were made from a byproduct of cotton harvests and a semisynthetic material made from wood pulp. She also revealed a small crescent-shaped black handbag made from the root structure of mushrooms.[7] McCartney has long championed sustainability practices in an

industry that's historically been the antithesis of that. *Vogue*, *The Guardian*, and a handful of other media outlets reported on the shift to sustainable sourcing, but most missed the climate connection.

As for skyrocketing grocery bills, that, too, is a story about our warming world. For example, olive trees have struggled in Italy amid hot temperatures and ongoing drought. Harvests are smaller, but demand is high. So prices increase.[8] Staples such as corn, wheat, rice, and potatoes are susceptible to extreme weather. If it's too hot, rice, for instance, can't self-pollinate, which leads to lower yields. Consumers pay more at the grocery store with less rice on the market. Changes in temperatures and rainfall patterns will directly affect the crops and fruits grown worldwide and ultimately get reflected in prices at the grocery store.[9]

Human-driven climate change is in every aspect of our lives, so it's in every beat in the newsroom. Making these climate connections is part of the job, whether someone is a general assignment reporter, a sports reporter, or a journalist who covers culture and arts or business. We are all climate journalists now.

The ability to recognize, report, and make the climate connection clearly in stories while also getting the science right can be an overwhelming challenge. That's why this book exists: to support journalists, no matter where they are in their careers, with best practices and advice for reporting on the most important story of our time.

To do that, we must first understand how climate change has become the global issue it is today and how the media's coverage of this monumental problem has evolved. Then, we delve into the foundational science every reporter must know to make accurate climate connections in stories. Part I concludes with the history and the evolution of international, national, and local efforts to address climate change.

Part II focuses on the forces influencing climate narratives and how to counter them. Journalists will learn to navigate the complicated world of misinformation, disinformation, and greenwashing by politicians and corporations that don't want carbon-emitting practices replaced by renewable energy. Climate reporting also raises questions about journalism's longstanding practice of remaining objective and what that means today in a crowded media landscape.

Climate change also intersects with social justice issues, and its impacts fall most often on those who have contributed the least to global warming. Part II explores those injustices and how to report on communities most

affected. It ends with a practical guide for developing climate stories that empower people to see what's possible through responses and solutions to a warming world.

Part III examines emerging trends in climate coverage, including the expanding role of litigation to try and hold corporations and governments accountable for addressing climate change. The book finishes by acknowledging the formidable work ahead for journalists who report on a warming world. Interviewing survivors of climate disasters can be heart-wrenchingly difficult. Witnessing trauma and the suffering of others can last a lifetime. The continuous act of reporting on a warming planet—the pain felt from the loss of ecosystems and species and the migration of people away from rising seas—affects our well-being. The trauma from reporting on human-driven climate change is not to be underestimated. Part III concludes with advice and self-care practices to help journalists protect their hearts and minds.

This book was written during a period of acceleration among media organizations that recognized the urgent need for climate coverage in the United States and beyond. That acceleration has happened against a backdrop of increasing extremes brought on by human-caused climate change. An urgency exists, too, for journalists to capture emerging climate narratives to help inform people of the implications of and responses to global warming.

The Rise in Climate Reporting

Not long ago, being an environmental reporter—let alone a journalist who covered climate change—was a niche role in the newsroom. In my early years as a radio journalist in the West, I needed a well-focused, compelling story to pitch before an editor would say "yes." Some editors just didn't see environmental stories as a priority because they are hard stories to tell, and they often evolve over long periods of time. Daily story assignments usually relegated my environmental reporting to the back burner, but in between deadlines I focused on developing and reporting stories about protecting public lands, endangered species, and forest health.

Hot Take: *Human-driven climate change touches all aspects of life, including sports, business, culture, and policy. Journalists must make the climate connection clear for audiences regardless of the beat they cover.*

I started in journalism when climate change was garnering more

attention. Fights brewed on Capitol Hill over whether global warming was real and whether humans were to blame. The media framed early stories about climate change as a battle between scientists and climate deniers. These debates typically divided sharply along party lines between liberals and conservatives. I saw this through my reporting early in my career, including the reintroduction of gray wolves in Idaho and Montana, efforts to protect endangered species such as salmon and spotted owls, and managing forest health and wildfires. I was a journalist on the cusp of climate change, as both a developing issue and a journalism beat. It was hard to find other journalists like me who cared about the natural world and our impact on it and who wanted to investigate and expose those impacts. I wasn't the only one who felt alone on the environmental beat.

Michael Kodas, a journalist, photographer, and author, remembers the pushback he would get from editors when he pitched a climate story. "I can remember mentioning that climate should be a beat and kind of being laughed out of a meeting," he recalled.[10] Kodas was met with similar reactions when he and colleagues at the *Hartford Current* would pitch a climate-related project and be "completely shot down." The newspaper, Kodas says, just wasn't interested.

Washington Post deputy climate and environment editor Juliet Eilperin remembered when only a small group of journalists covered climate stories. "It was seen as this niche, almost entirely scientific topic—as opposed to a global phenomenon with broad implications," Eilperin told *The Columbia Journalism Review* in an interview.[11] More than thirty years ago, climate reporting meant trying to tell a compelling story about something that would happen centuries from now. That's what long-time climate journalist Andrew Revkin called a "slow drip" issue: the changes were hardly noticeable decades ago, delaying the urgent need to respond.[12]

That changed in 1988, when climate change made the headlines. Wildfires lit up Yellowstone National Park that year.[13] Thick smoke blanketed massive swaths of the Amazon rainforest from human-lit fires, prompting *The New York Times* to publish "Vast Amazon Fires, Man-Made, Linked to Global Warming."[14] Much of the United States baked under excessive heat that would be remembered as the "great heat wave of 1988."[15]

That same year NASA climate scientist James Hansen testified before members of the US Senate Energy and Natural Resources Committee that his research showed that the planet was warming up. Global warming would generate extreme weather, such as heat waves, and he was 99 percent certain

human activity was driving it. "In my opinion, that the greenhouse effect has been detected, and it is changing our climate now," Hansen said.[16] His testimony received widespread media coverage with alarming headlines including "Global Warming Has Begun, Expert Tells Senate."[17]

Also in 1988, the United Nations Environment Programme and the World Meteorological Organization established the Intergovernmental Panel on Climate Change (IPCC). The UN General Assembly endorsed the creation of the IPCC and tasked it with developing the world's first "comprehensive review and recommendations with respect to the state of knowledge of the science of climate change."[18]

The IPCC's formation and subsequent task merited barely a whisper in most media outlets. Early reporting on climate change was like that: intermittent and splashed across front pages when something significant occurred, like Hansen's testimony. Research finds that reporting done by the US prestige press, including *The New York Times* and *The Washington Post*, electrified a "denial discourse" in the late 1980s and early 2000s over climate change. The journalistic norm of maintaining balance generated a false narrative that pitted climate scientists against climate deniers.[19]

The George W. Bush administration, for example, held a three-day conference on global warming in December 2002. The meeting came after a year of "global warming scares" *The Washington Post* reported. Glaciers in the Bolivian Andres were rapidly melting that year, and an ice shelf in the Antarctic "shattered and collapsed into the sea." A *Washington Post* reporter noted in coverage of the conference that the administration acknowledged "that global warming poses serious problems." However, officials had "numerous uncertainties" about the causes and effects of a warming world. Then President Bush called for "a decade of research" before committing to "anything more than voluntary measures to stem carbon dioxide and other greenhouse gas emissions from industry and vehicles that have been closely tied to global warming."[20]

That statement illustrates the perpetual uncertainty about climate science that the media in the US perpetuated. Climate stories regularly pitted climate scientists against climate deniers, creating a "both-sides-ing" narrative that sparked debate over whether climate change was real and, if it was, what was driving it.[21] The echoes of that style of climate reporting reverberate to this day. However, a lot has changed since those early years of climate reporting, and now, not a day passes without climate change in the headlines. So what's changed?

Climate Journalism Arrives

Some clear shifts have led to growth in climate journalism, starting with the fact that the science of climate change and what's causing it is settled. That's a significant change from when James Hansen first testified before Congress in 1988. Scientists now unequivocally agree that human activities, largely the burning of fossil fuels, have caused global warming. Since 1970, the global surface temperature has increased faster than in any other fifty-year period in the last 2,000 years.[22] Planet-warming pollution—carbon dioxide, methane, and nitrous oxide—has steadily climbed. Most people around the world are experiencing the impacts of a warmer world.[23] Sea level rise. Disappearing glaciers. Heat waves. Drought. Flooding from torrential rainfall. Hurricanes. Wildfires. Historic temperature records are being broken. Global temperatures were the warmest on record in 2023, leaving some scientists shocked at the rate of acceleration.[24] "Sirens are blaring across all major indicators," says UN secretary-general António Guterres. "Some records aren't just chart-topping, they're chart-busting. And changes are speeding up."[25] Then 2024 toppled the previous year's record to become Earth's warmest recorded year. Sea ice coverage in Antarctica was the second-lowest on record, alongside 2024's record heat.[26]

National and international media have recognized that human-driven climate change is a significant and urgent story to cover. In recent years, media outlets have added reporters to cover our warming world from major organizations to regional and local outlets.

The Media and Climate Change Observatory at the University of Colorado Boulder, which began in 2007 at the University of Oxford, tracks global media coverage of climate change. Nearly twenty years ago, climate coverage showed up as a blip, but within the last decade coverage has increased, with more people focusing on it.[27]

The year 2021 broke the all-time record for climate stories reported globally. However, journalism job losses, combined with competition for headlines about political crises, contributed to a dip in global climate stories, with a decline of 14 percent in 2022 and another 4 percent in 2023.[28] Global coverage of climate change or global warming continued to fall in 2024, with a drop of 16 percent from 2023.[29]

Despite fluctuations in coverage, climate journalism is far more robust than it used to be. The days of being the lone environmental reporter in the newsroom are gone. Large teams are now dedicated to environmental and climate-related coverage at national and international news outlets such

as *The Associated Press*, *The Washington Post*, *The New York Times*, NPR, and CNN. TV meteorologists increasingly help make the climate connection in their forecasts. Local news publications, public radio stations, and TV stations might have at least one reporter covering environmental and climate stories.

Michael Kodas, who once proposed climate change as a beat, is now a senior editor at *Inside Climate News*. Juliet Eilperin became the deputy climate and environment editor at *The Washington Post*. As for me, I'm the senior supervising climate editor for NPR's climate desk, which was formed in 2022. As part of my role, I oversee a public radio collaborative of climate reporters across the country and work with NPR climate desk reporters.

"It's been incredible to see, certainly based on my experience at the *Post*," explained Eilperin in a *Columbia Journalism Review* interview, "how journalists in recent years have connected the dots. Climate has become a story for the business section, the sports section, the national and metro desks, and everywhere else in the newsroom."[30]

Because climate change affects nearly everything, news organizations have been working to help journalists who aren't steeped in climate reporting understand the basics. At NPR, other desks, radio shows, and podcasts turn to the climate editors and journalists for help. I often answer questions and review scripts and digital stories before they are aired or published to check the climate context and ensure that the science is right. During extreme weather, such as a blistering heat wave or a developing hurricane, we send out newsroom guidance about how climate change broadly impacts such events. The goal is to give journalists and editors who don't regularly cover climate change easy-to-use language to drop into relevant stories.

Peter Prengaman, who leads the AP's global climate and environment team, says his team has held several climate-related training sessions for the entire organization, on topics such as evaluating scientific studies and spotting greenwashing. "Training has really helped make people more comfortable," he says.[31] Climate change coverage at *The Washington Post* also goes beyond the desk. "We're also constantly in communication with colleagues on other desks. There's no arm-twisting," explained Eilperin in an interview with *Columbia Journalism Review*. "The level of excitement and eagerness among our colleagues to participate in these kinds of stories (climate) is extraordinary."[32] It *is* extraordinary because it wasn't that long ago that climate coverage had a low profile in the daily news zeitgeist.

Climate is such a massive topic that, in recent years, newsrooms have added reporters who specialize in a specific aspect of climate coverage, such as the injustices brought on by climate change or the energy transition. *Inside Climate News*, for example, was launched in 2007 with two reporters to fill the gap in climate news in the United States. Now, the digital publication has more than twenty reporters, many focusing on particular areas, including climate activism and health and climate justice.[33]

For *Inside Climate News* senior editor Michael Kodas, climate journalism's transformation is a recognition of how important climate change is and "how neglected it has been for so long." The days have disappeared when reporters had to push to get their editors to say yes to a climate pitch, he says. The challenge is how to cover so much that falls under the climate umbrella. "We have to prioritize," Kodas says. "We have more climate stories coming from all of us than we have the bandwidth to report and get published."[34]

Climate journalist Amy Westervelt has been a part of this transformation. She remembers her first climate-related story around 2002. She was in the San Francisco Bay area reporting on clean technology such as electric vehicles and their batteries. Stories about how to green a home and climate politics, Westervelt says, were also showing up in the news. Back then, though, the idea of "anyone writing a personal essay about climate was totally ridiculous," Westervelt says. "Now I feel like there's almost every different flavor of story."[35]

Investigative climate and accountability journalism is happening far more than in those early climate reporting days. Westervelt points to 2015 as a watershed moment for investigative climate journalism. That year *Inside Climate News* published a nine-part groundbreaking investigation by reporters Neela Banerjee, Lisa Song, John Cushman Jr., and David Hasemyer called *Exxon: The Road Not Taken*.[36] Their reporting revealed that the oil giant knew about climate change in the 1970s and then covered it up. "Ever since the Exxon Knew stories, that really opened up a whole bunch of interest," recalls Westervelt.[37] That interest has only grown in recent years.

Two years later, in *New York Magazine*, David Wallace-Wells's essay *The Uninhabitable Earth* was published with the opening line, "It is, I promise, worse than you think."[38] Wallace-Wells detailed an apocalyptic reality of climate change left unabated—a world in economic collapse, scorched by the sun—a personal and grim take on the state of climate change the likes of which hadn't been seen.

Climate scientist Michael Mann responded with an opinion piece in *The Washington Post* noting the rise in climate doomism after the Trump administration withdrew the United States from the 2015 Paris Agreement. He pointed out that "doomist narratives" were showing up in respected news outlets. Wallace-Wells's essay was an example. Mann wrote that the risks of climate change left unchecked should not be understated, but "there is also a danger in overstatement that presents the problem as unsolvable and future outcomes as inevitable."[39] Climate change stories, from personal essays to accountability reporting, had entered the mainstream.

Who's Covering Climate

A shift is also under way in who is entering the climate reporting field: Today's climate journalists are more ethnically diverse, and they are transforming what has historically been a predominantly White male profession. I've seen this shift firsthand and made it my professional mission to help cultivate this transformation through roles I've held, including my tenure on the Society of Environmental Journalists (SEJ) board.

Journalists such as Halle Parker embody this transformation and give me hope about the future of reporting on the environment and climate change. Parker defines herself as a Black environment reporter who reports on climate change. She wanted to be a sports reporter and had a passion for social justice issues. Her first reporting job out of college was working as a county government reporter in Virginia. She covered the state's largest county—Pittsylvania County—where agriculture was big business. Parker reported a lot about farmers, and in 2018, Virginia had unpredictable weather—spans of torrential rain followed by spans of crippling drought. Farmers, she remembers, were confused. They were used to shifting with Mother Nature over the years, but this was different. "They were really struggling," Parker says.[40]

She knew about climate change but hadn't fully understood how weather extremes could affect people until she reported on what farmers were going through. Seeing those farmers struggling "made it [climate change] feel more real to me." Parker realized climate change was "clearly going to be one of the largest issues of my lifetime." She saw climate change as an area of coverage where she could build a career that combined her interests in social justice with the environment.[41]

Parker isn't the only one who has reached this realization. I saw this convergence of social justice and environmental and climate-related interests

in several of my students while teaching at Arizona State University's Walter Cronkite School of Journalism and Mass Communication. They were studying at a time when protests over racial injustice and police brutality had swept across the country. They saw the White male patriarchal society that had defined journalism as oppressive, and many of the pillars of journalism, such as objectivity, didn't seem to work in a society where so much injustice needed to be addressed. My students asked questions. They were fired up. I see their impact today as they have gone on to jobs in digital, television, and radio news.

Journalism organizations, such as the Uproot Project, have formed to support and foster a new, much more diverse core of journalists, who are continuing to join the climate reporting ranks. Meanwhile, SEJ, which was created more than thirty years ago by a small group of White journalists, has worked to prioritize and embed diversity, equity, and inclusion into everything it does. That slow transformation is something I helped during my time as president of SEJ's board of directors. That long-overdue work means SEJ's membership is changing, too. The board is more representative of the members it serves, and diversity at SEJ's annual conference has increased through fellowships and outreach.

Support, resources, and mentorships have also increased as more climate journalists enter the profession. In recent years, new organizations have sprung up to help journalists cover climate change, such as Climate Central, SciLine, Covering Climate Now, the Uproot Project, and journalism collaboratives. The increase in support for climate journalism indicates that the need remains high.

What Audiences Want

Children born today will never know a world without climate change or extreme weather. In fact, children who were born in 2020 will live through a "two- to sevenfold increase in extreme events" especially heat waves. That's compared with people who were born in 1960.[42] Human-caused climate change has already altered the planet, and those impacts will only intensify in future years.[43] In the United States, research has found that most people think global warming is happening, and 58 percent understand it is human caused. Most Americans surveyed say climate change affects many environmental problems, including air pollution, drought, water shortages, rising sea levels, and even power outages. Although there is a general recognition of global warming and its impacts, 65 percent of Americans rarely discuss it with family and friends.[44]

Yet the American Psychiatric Association has found most people surveyed in the United States are "somewhat" or "extremely" anxious about how climate change is affecting the planet, and more than half share similar anxieties about how climate change affects their mental health.[45]

These insights come at a time when more journalists are reporting on climate change. However, more than half of the Americans surveyed don't see much climate news even though they want it.[46] What's going on if there's more reporting on climate than ever before?

Part of the answer is that news avoidance globally remains high, up 39 percent since 2017. Worldwide, the same percentage of people say they feel worn out by the relentless nature of news and tired of news outlets covering the same set of stories with only slight variations.[47] For over a decade, climate stories have focused primarily on the extreme impacts and the catastrophic aftermath, the doom-and-gloom headlines.

How people get their news has also changed dramatically over the decades. US newspapers as a news source have plummeted from 47 percent to 16 percent since 2013. TV as a source of news also dropped significantly during that period, from 72 percent to 51 percent. People are going online or to social media for their news.[48] While national media, including *The New York Times*, *The Washington Post*, and NPR, have built up reporting teams on climate change, other news outlets, especially television, have not prioritized this reporting.

How climate stories are framed matters. A recent survey by the Reuters Institute found people globally want positive climate news and climate developments and want to know what can be done.[49] When people in the United States were asked what questions they would pose to experts about global warming, they responded by wanting to ask what countries such as the United States can do to reduce global warming: "Is it too late to reduce emissions and stop global warming?" And "How do you know that global warming is caused mostly by human activities, not natural changes in the environment?"[50] Those questions offer insight into what areas of climate coverage will resonate with people the most.

From my experience as a climate editor, I often see another challenge in climate reporting: failing to help readers fully understand the connections to climate change. Stories about flooding, hurricanes, wildfires, and droughts that omit the influence of climate change and its causes do a disservice to readers. Climate change communicator Susan Hassol has seen this failure to connect the climate dots in stories. Extreme weather has the fingerprints

of climate change, caused primarily by burning fossil fuels. There's nothing natural about global warming. "That entire thread is so important for people to get, and it's very rare to see it done," Hassol says.[51] In the following pages, journalists will learn how to make that climate connection confidently.

Understanding people's attitudes, beliefs, and questions about climate change can help journalists and editors develop stories where the science is accessible, and people might actually walk away feeling empowered to take action on the pressing challenges brought on by a warming planet.

Climate Reporting: "It's Complicated"

Mark Schleifstein has spent most of his decades-long reporting career covering environmental issues, including hurricanes and eroding coastlines. Many of the stories he's reported over the years have developed into complex stories. He pulls on a story idea like a thread in a sweater that unravels over time. Climate change stories especially have so many elements that Schleifstein says his editors know that "my favorite curse word is 'It's complicated.'"[52] As a reporter for *The Times-Picayune | The New Orleans Advocate*, Schleifstein knows hurricanes reveal where communities' climate vulnerabilities lie. It's not just a story about a hurricane rapidly spinning up in the increasingly hot waters of the Gulf of Mexico; it's about sea level rise, warming temperatures, eroding coastlines, and community preparedness, and all those connections must be made in his stories. Covering climate change is complicated; getting climate stories right can be surprisingly hard.

Climate journalism is challenging because the science can be intimidating and overwhelming for new journalists. Misinformation and disinformation campaigns aim to divert attention from industries such as oil and gas, creating confusion about the true state of the climate crisis. Climate change is a social justice issue that exposes the deep inequities faced by communities that bear the brunt of its impacts despite contributing the least to the problem. Litigation is increasingly significant as more governments, organizations, and communities take oil giants to court to seek compensation for climate-related damages. Understanding the history of global climate response efforts, including treaties and policies, is essential for grasping the current state of global warming. Furthermore, covering climate change can be emotionally taxing over time, as the sheer scale of the issue can lead to anxiety and a sense of doom. Being a journalist who wants to incorporate or focus entirely on climate change means getting comfortable with a vastly complex and intertwined coverage area.

What We Know About the Science

Journalists don't need a science degree to report on climate change. In fact, several reporters featured in this book do not have a science background or shied away from science. However, reporters do need to know the basics of climate science to avoid making mistakes in interpreting the science or misrepresenting it. What climate change means for the planet is actually straightforward. Susan Hassol, who has spent most of her career communicating about climate science, explains climate change this way: "It's real. It's us. It's bad. Experts agree. And there's hope."[53] These five essential phrases tell you everything you need to know about our warming planet.

It's Real

Climate scientists have known for decades that Earth's climate has been warming, and human activities, primarily the burning of fossil fuels, have driven rising temperatures globally.[54] The IPCC started to assess and gather climate change science in 1988.[55] The scientific consensus over whether people were responsible for rising temperatures grew with each assessment. The IPCC's Fourth Assessment in 2007 marked a turning point. That's when climate scientists agreed that human-caused climate change was "very likely" happening.[56] Their confidence has only increased over time, with the latest assessment stating that climate scientists now know that human activities are the "unequivocal" cause of climate change. "It is virtually certain," the report states, that human-induced increases in greenhouse gases have led to global warming.[57]

Since 1880, the average global temperature has increased by about 2°F, or 1.1°C. Most of that warming has occurred since 1975.[58] Global warming comes primarily from burning fossil fuels such as coal, oil, and gas. These fuels generate pollution—methane, carbon dioxide, and nitrous oxide—that traps heat in the atmosphere.[59]

Just as a blanket retains your body's warmth, Earth's atmosphere traps some of the sun's heat to keep the planet warm for life to thrive. However, if you add extra blankets, eventually you get too warm. Human activities, such as burning fossil fuels and deforestation, add "extra layers" to Earth's blanket by increasing the amount of greenhouse gases such as carbon dioxide. As a result, more heat gets trapped. Scientists say Earth is warming at a rate never seen before.[60]

It's Bad

Human-caused climate change has already had wide-reaching impacts around the globe.[61] "That's not because Earth was a perfect temperature before and now it's not," explains Hassol. "It's because we built and developed our society around the climate that we had. And any change from that is going to cause problems."[62]

Glaciers and ice sheets are disappearing. Plants and trees are blooming earlier in the year and animals are moving to new regions.[63] Extreme weather, from droughts to catastrophic flooding, causes billions of dollars in damages every year.[64] Sea levels have already risen 8 to 9 inches,[65] and "that rise has accelerated in recent years," says Hassol.[66] Warmer temperatures in the Arctic and Greenland have led to melting sea ice and warmer oceans.[67] What happens in the Arctic can be felt all the way in the Gulf of Mexico.[68] "The increase in sea level, the increase in extreme weather events are the ways that we see climate change in our lives," says Hassol.[69]

Human-caused climate change also affects animals and plants at different rates. Warmer temperatures and increased moisture are shifting animal migration patterns.[70] "Ecosystems don't shift as a whole; the animals and plants move at different rates," Hassol explains. Birds can shift fairly easily, but plants don't. "You have this tearing apart of ecosystems, which is one of the reasons we have so much loss of species that we're seeing related to climate change and why it's the greatest threat to species."[71]

Experts Agree

The science is clear: The warming of our world is caused by humans.[72] For years, however, the science remained contested. Conservative political leaders, think tanks, and oil and gas companies lit a firestorm of disinformation to muddy the validity of science. The "climate wars," as climate scientist Michael Mann calls them, lasted decades, and several scientists, including Mann, were subjected to vicious character attacks.[73] Mainstream media presented a false balance in climate coverage, often giving equal time and credence to climate deniers alongside scientists. Research finds that people in the United States today significantly underestimate the actual scientific consensus on the fundamental causes of climate change.[74]

Debates are far more nuanced as scientists actively investigate the implications of how Arctic warming will affect the jet streams or how atmospheric and oceanic circulation patterns are being affected by extreme weather.

"There's always aspects of the science that are still under active investigation," Hassol says, but "the basic science is very well settled."[75]

There's Hope

Humans are why global temperatures have warmed 1.1 to 1.2°C (1.98°F) globally. The world will probably reach a 1.5°C (2.7°F) increase in the near future. Because humans caused climate change, we also have the power to stop it. The future rests in our hands. "Once we eliminate the production of heat-trapping pollution, climate change will stop," Hassol says. "Very quickly, within a decade, temperatures will stabilize. They're not going back down."[76]

The Spiderweb of Misinformation

Climate journalist Amy Westervelt's story about oil companies knowing that carbon capture is not a solution to climate change is an example of the responsibility journalists have to expose misinformation, disinformation, and greenwashing that industries such as the oil and gas companies continue to push. As Westervelt writes, people have probably seen positive oil and gas company ads that tout carbon capture and storage (CCS) as a solution in national media outlets.[77] Fossil fuel companies' messaging suggests that by capturing and storing carbon dioxide emissions from power plants and other sources, CCS technology can keep these planet-warming gases from contributing to global warming.

However, Westervelt reports that industry whistleblowers have shared internal documents with *Drilled* and *Vox* that say otherwise. Those documents, coupled with a federal investigation, "reveal an industry that is decidedly more realistic about the emissions-reduction potential of carbon capture and storage technology, or CCS, than it presents publicly."[78]

This is a classic case of climate misinformation and disinformation. CCS might help reduce emissions in sectors such as steel or concrete manufacturing. However, the IPCC has pointed out that CCS could achieve only a modest reduction under the most perfect circumstances. How much? Just over 2 percent of global carbon emissions by 2030.[79] This stark contrast between the industry's portrayal and scientific assessments highlights the critical need for journalists to investigate and challenge these narratives.

The oil and gas industry's aggressive promotion of CCS can be seen as a form of greenwashing, where companies exaggerate or misrepresent the environmental benefits of their actions to maintain a favorable public image. By emphasizing CCS as a key solution, these companies distract from

more effective measures, such as reducing fossil fuel use and investing in renewable energy sources. This not only misleads the public but also risks delaying the urgent actions needed to address climate change effectively.

Journalists play a crucial role in exposing such disinformation. By scrutinizing industries' claims, consulting independent experts, and relying on rigorous scientific data, journalists can help the public see through the greenwashing. Investigative and accountability reporting are essential to ensure that the public and policymakers are not swayed by misleading narratives and can make informed decisions based on the best available evidence. Misinformation, disinformation, and greenwashing have been prolific for decades. Journalists can find it challenging to address the myths. How do reporters hold industries to account? Chapter 4, on misinformation and disinformation, provides guidance on detecting and debunking misinformation from some of the country's leading researchers and journalists.

The Role of Climate Policy

Every year, world leaders, negotiators, scientists, and activists from nearly every country gather for a Conference of the Parties (COP), a global summit on climate change held under the United Nations Framework Convention on Climate Change. The scale of these gatherings is staggering. For example, COP27, held in Sharm El Sheikh, Egypt, brought over 45,000 people together, including journalists from around the world.[80] Naveena Sadasivam was among them. She describes covering COPs as "chaotic and stressful" but also fun, acknowledging, "this is why we're journalists and reporters, we want to be in the thick of things."[81]

The two-week-long summit requires stamina to report on as delegates work nearly around the clock to negotiate agreements that could shape Earth's future. One of the most critical international treaties on climate came out of COP21 in 2015. The Paris Agreement established a goal to limit global warming to well below 2°C (3.6°F), ideally keeping the average temperature increase to under 1.5°C (2.7°F).[82] The treaty was groundbreaking in shifting the global response to climate change by mandating that countries develop and submit national climate action plans, known as Nationally Determined Contributions.[83] The Nationally Determined Contributions outline how each nation will reduce emissions and adapt to climate impacts, with the understanding that the commitments will be updated every five years.

Sadasivam describes fourteen days of working twelve hours a day with hardly any breaks. Reporters at climate policy conferences must navigate a

maze of side events, press conferences, and closed-door negotiations, often held simultaneously in different parts of a massive conference venue. Access to high-level meetings can be limited, which adds to the challenge of getting information. "It's like drinking out of a firehose. It's just pure insanity," Sadasivam recalls.[84]

Covering COPs and translating what happens to the public is part of reporting on climate change. Sadasivam and other journalists covering these international gatherings know they need a plan for approaching coverage. Understanding the history and agreements of the past also helps to inform future stories about global actions.

Journalists must also know what policies are in place nationally to address climate change. In the United States, the Biden administration implemented the country's first major climate policy, the Inflation Reduction Act, which established billions of dollars in incentives to electrify the United States and move away from fossil fuels. The Inflation Reduction Act is just one of many relevant policies, but there are other landmark laws to know. The Clean Air Act is among them. It regulates air quality in the United States. The Endangered Species Act protects wildlife on the brink of extinction and will continue to have a prominent role in biodiversity and conservation in a warming world. The National Environmental Policy Act is another US law that requires federal agencies to undertake a thorough review process before deciding whether to move forward with a major project such as a highway or a mine.

Chapter 3, on significant international and national policies and treaties, provides an essential overview of the most important elements of climate policy and how to incorporate them into stories.

Climate Change in the Courts

Litigation is an emerging aspect of climate coverage that further complicates what journalists need to know. I learned from my students at Arizona State University just how overwhelming reporting on environmental cases can be when you're covering your first court case. Who's suing whom? And over what? More journalists will need to become increasingly familiar with reporting on litigation.

Courtrooms are becoming an arena where rulings—or the lack thereof—can shape the direction of future climate action, from interpreting laws to influencing climate policy. That's happening as governments and corporations face growing pressure to act on climate change. *Juliana v. United*

States (2015) is recognized as one of the earliest cases to attempt to hold the government accountable for climate change.[85] Twenty-one youth plaintiffs argued that the federal government violated their constitutional rights by allowing planet-warming pollution to build up in the atmosphere. The Department of Justice has worked for years to delay and dismiss the case.[86] As of this writing, the *Juliana* case has not made it to trial, but it has inspired similar legal action by youth in other states, including Montana and Hawaii.[87]

However, youth-led climate cases aren't the only ones, although they generally get media coverage because their stories are compelling. A growing number of lawsuits aim to force fossil fuel companies to reduce greenhouse gas emissions, and others seek financial compensation for damages emitters have caused. The majority of climate-related cases, at least in the United States, concern regulations.

As more cases are filed globally, reporters must learn how the courts work, how to read cases, and how to interpret judicial opinions, along with following what happens after decisions are made. Covering climate litigation can expose corporations' financial and ethical responsibilities, reveal the human stories behind legal actions, and shed light on how the judicial system is being used to address one of the most pressing issues of our time. Chapter 8, on climate litigation, includes guidance on accessing court documents, understanding the elements of a lawsuit, and tracking developing cases.

The Skills Needed for Reporting on Climate

The intersectionality of climate change, spanning science, policy, and the extreme impacts of rising temperatures, creates a complex and challenging landscape for reporters. Understanding the intricate connections between climate change and many aspects of life is crucial, especially as the public comes to recognize the significant changes happening around the globe. Journalists will learn essential skills in the chapters that follow, from reading scientific studies to framing stories that make the climate connection clear. Those are tangible actions. What's less tangible are the natural instincts, such as curiosity, that make someone well suited to be a journalist, especially one who wants to report on our warming world.

Cultivate Curiosity

Ask any seasoned journalist what the most vital skill in their toolkit is, and the answer will almost always be curiosity. Freelance journalist and author Meera Subramanian, whose narrative nonfiction has graced the pages of

Nature and *The New York Times*, describes curiosity as the pivotal moment when something gives you pause and makes you wonder. This innate drive to ask questions, explore new angles, and burrow deeper into research is the foundation of distinctive and engaging climate reporting.

In a field as intricate and far-reaching as climate change, curiosity is not just a skill; it's a guiding compass. Subramanian puts it this way: "Appreciate that being a journalist means you get to take the time to go down those rabbit holes that other people might be curious (about), but they just don't have the time to do it." She says following the things you care most about translates to the audience regardless of the medium you work in. Curiosity is how journalists develop sources that lead to stories, which lead to even more. "Your knowledge base will just become deeper and deeper," explains Subramanian. "That will inform even better storytelling."[88]

Being curious means asking "why" a lot; that question serves journalists well. Journalists, especially reporters who are new, tend to overcomplicate questions. But part of being a climate reporter is translating science, for example, in a way that's accurate and accessible for people. That means not being afraid to ask the obvious or silly question. That "silly" or "stupid" question usually ends up being the right question for the audience.

Avoid Perfectionism

Climate change is an urgent story and is no longer a slow-drip tale, as it was decades ago. The impacts are being felt across Earth. It's multifaceted, requiring a newsroom-wide response to integrating climate into almost all stories. For Michael Kodas with *Inside Climate News*, it's about getting important reporting out to the world and not letting the perfect be the enemy of the good. That can happen as journalists try to perfect writing, get additional sources beyond the many they've already interviewed, or compulsively rewrite a story to get it absolutely flawless. I've helped numerous journalists—some of whom have been reporting for several years—who had become paralyzed by overthinking and overreporting. I confess I have done this with my own stories. In hindsight, those stories weren't improved by the additional stress or time that went into trying to get them perfect.

Yes, an additional interview or another day to write a story is what every journalist desires, and it's what every editor dreads. "One of the things that people fail to take into the equation of the significance of one piece of environmental journalism is the idea of urgency," says Kodas. The climate crisis is accelerating, so stories need to "hit fast and hard," he adds.[89] Journalists need

to relinquish the idea of perfection in favor of publishing timely, important, and accurate information about the climate crisis.

Take Time

Although laboring over sentences can reach a point of diminishing returns, journalists will find tremendous value in taking time to develop relationships with the communities they cover. Ezra David Romero, a climate reporter for public media outlet KQED in San Francisco, knows this well. Some of his reporting on climate change intersects with communities that have historically been marginalized and are confronting past injustices.

Romero builds relationships with people in these communities over time, without an agenda. So when extreme weather strikes and floods a community, Romero has already developed relationships with people whom he can turn to for reporting. That's different from reporting on a community and then never returning once the story is done. Romero says community voices tend to get buried in stories, making sources feel unheard, disrespected, or tokenized. "What I try to do is spend a lot of time with them if I can," Romero says. That's not always possible for a pressing deadline, "but I do my best to really accurately honor their experience with nuance," he says.[90]

Find Joy

Covering climate change is a serious endeavor, but it's also a rewarding and fun career path. As I reflect on my journalism career, I see a life shaped by following my curiosity and pursuing stories that were challenging and, at times, heartbreakingly difficult. I've also had many moments of joy in the field, talking with people, listening to their stories, and asking questions. The people who've generously shared their stories and experiences with me still light me up with an immense sense of gratitude to this day.

I'm grateful to have found a profession that has allowed me to ask questions and to have an unofficial license to be a lifelong learner. My heartfelt advice is to trust that curiosity and find joy in doing something meaningful. Any journalist reporting on climate change will need that joy and hope to advance the narrative arc of our warming planet.

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