

The Heat Wave

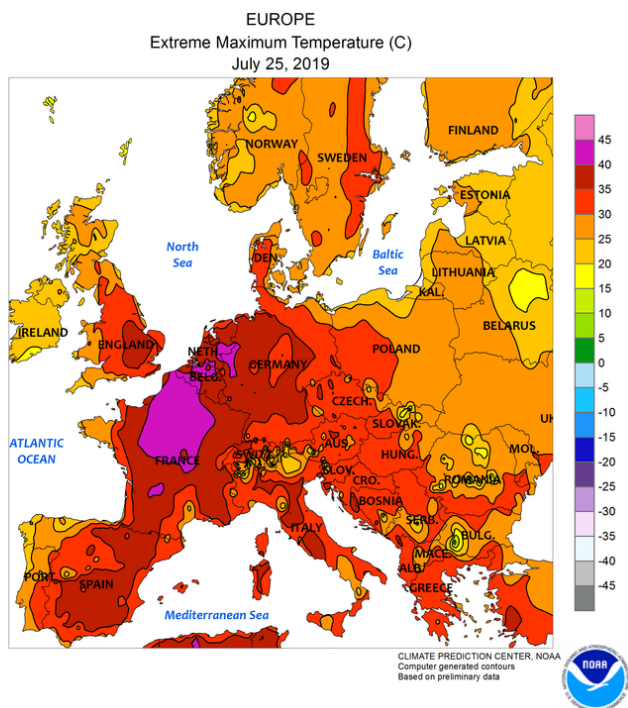
At first, I thought there was something wrong with the air conditioning.

Gen and I had settled into our seats on a train bound for Prague from Berlin. Although it was early afternoon on a hot day in late July the temperature in the compartment was warmer than I expected. I passed my hand across a vent along the base of the large window. A trickle of air leaked out. Soon there were six of us in the compartment, adding our body heat to the stuffy conditions. When would the air conditioning kick in, I wondered? I had never travelled by train in Europe during high summer, so I wasn't hip to the protocols for cooling down passengers. Maybe the train needed to be moving. Shortly after leaving the station, I ran my hand over the vent again. Same trickle. Thirty minutes later I tried once more. Nothing had changed. Maybe it was broken? Back in Berlin, I felt a twinge of concern when our train pulled up. It looked old. To save money, I had booked us in second class on a commuter run to Prague, where we had started our sojourn nine days earlier. The train, however, wasn't much different than the one that carried us to Berlin, a trip that hadn't caused any discomfort. Maybe it was a cultural thing. As an American, I'm accustomed to air conditioning nearly everywhere. In Europe, there is a different attitude toward the convenience, as we discovered in Berlin where all the buildings we visited lacked cooling air. I understood why – northern Europe is temperate in summer.

Still, something seemed wrong. An hour into our journey, I was sweating – a lot. There was no way to open the large window and the meager air flow hadn't altered, except to die briefly when we pulled into a station. Soon, the compartment became a sauna. I glanced at our fellow travelers. The man wearing European-style glasses seated next to Gen seemed unperturbed by the conditions. The other passengers were three cheerful young adults from Ireland who disappeared into their smart phones as soon as we left Berlin, though occasionally they spoke short sentences to one another. They also seemed unfazed. The heat continued to build. Gen fanned herself with a map. I wiped my face on a sleeve as I watched pretty farm country roll past under a cloudless sky. Was I just being a wimp? It had been a while since Gen and I had done any real traveling, preferring to stay close to our home in New Mexico. Maybe I had gone soft. I passed my hand over the air vent again. Still leaking. Perplexed, I gazed at the farmland and tried to put the conundrum out of mind. Then I heard two words that changed everything.

“Heat wave,” one of the Irish lads announced, looking up from his phone.

And not just any heat wave – a record-smashing one. It was July 25th, 2019. In Paris, the thermometer hit 108.7° (42.6° C), demolishing by four degrees a record that had stood since 1947. A BBC announcer on the television in our hotel room that evening called the news “astonishing.”

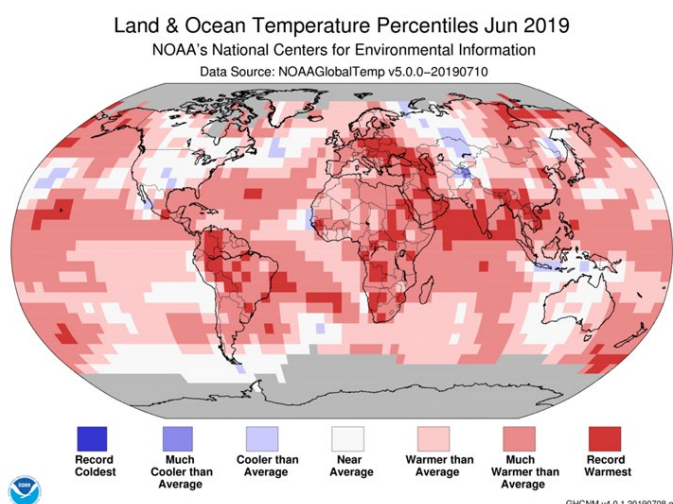


Germany set an all-time national record of 108° surpassing the previous mark by nearly four degrees. It was a similar story in Belgium and the Netherlands, where all-time highs were surpassed by six and five degrees, respectively. According to the Royal Netherlands Meteorological Institute, temperatures had never risen above 104° (40°C) in recorded history. The national weather service in England reported a reading of 101.7° at Cambridge University, breaking the previous 2003 record and marking only the second time temperatures had reached triple digits in the United Kingdom. Ultimately, sixty cities across Europe set all-time high temperatures, breaking records in places that had stood for a century. No wonder our compartment

on the train became a sauna! I sympathized with the passengers on a Eurostar train in Belgium that broke down in the heat. They were not allowed to open windows or leave the train for three hours for safety reasons. A person was quoted saying “I have never been so hot in my life.”

The words were prescient. All-time temperature records are usually set incrementally, often by only a few tenths of a degree, but the records that fell on July 25th were obliterated. The German Meteorological Service called it “a day which will make weather history.” It upended scientific expectations as well. Marshall Shepherd, director of the University of Georgia’s atmospheric sciences program, said the heat wave’s demolition of temperature records had “established an entirely new baseline.” An analysis published in early August confirmed Shepard’s observation, calling the scale and intensity of the heat unprecedented. “We find that it was much more extreme than any other heat wave we’ve looked at over the last few years,” said Geert Jan van Oldenborgh, one of the scientists that conducted the assessment. By their calculation, July 25th, 2019, was 3° C warmer than a late July day in 1900 – nearly double what scientific models had been predicting. Experts would now have to readjust their models for future temperatures – upward.

Not surprisingly, July went into the books as the hottest month on record. This news wasn't a big shock, however, because a previous heat wave in June had also set temperature records in Europe, though not as dramatically. The month claimed the title as the hottest June ever recorded on the continent. It wasn't an isolated condition. There were concurrent heat waves in South Korea, Japan, India, the East Coast of the United States, and Alaska whose largest city, Anchorage, set an all-time high temperature on July 4th. The culprit was climate change, of course. "The verdict is in," said Radley Horton, a climate researcher at Columbia University. "Increasing greenhouse gas concentrations due to human activity – by raising average temperatures – have loaded the dice toward more frequent record-breaking heat extremes." In a speech, 70-year old United Nations Secretary-General António Guterres put the unprecedented nature of these events in perspective. "We have always lived through hot summers," he said, "but this is not the summer of our youth. This is not your grandfather's summer." Perhaps most poignantly, twenty-five year old journalist Jack Holmes, writing in *Esquire* magazine, said this about the various heat waves: "It's the first summer of the rest of our lives."



I didn't want to think about heat waves or climate change, however.

We went to Europe to see our daughter Olivia. She had been living in Berlin for six months as part of her college's Study Abroad program and though we had been in regular communication we were eager to hear about her adventure in person. How had our sweet, shy child fared? In our family, Olivia is the quiet one. Caught between her garrulous twin brother and her excitable, overeducated parents Olivia had to learn over the years to speak up. Now she was on her own in a foreign country! As a family, we had traveled many times, including twice to Europe, so Olivia was familiar with the challenges of getting from one place to another. Still, when she took the train alone to Amsterdam on spring break, I fretted like any parent. Did she take her umbrella? Could she find the youth hostel? She was fine, of course. Her subsequent sojourns to Poland, Munich, Copenhagen, and other cities went off without a hitch. Before meeting us in Prague, Olivia made a lightning visit by train to Vienna. No sweat. We wanted to hear all her stories.

I had other stories on my mind as well, starting with Prague itself. In the late 1950s, my parents visited the historic Czech city, hidden quietly behind the Iron Curtain. It made a deep impression on my mother. She loved its narrow streets and medieval architecture and sang its



Old Prague

praises. It became a melancholy tune over the years. Escaping a miserable childhood in West Virginia, she became a passionate traveler after graduating from college in 1952 and marrying my father. She soaked up new places with the same hungry energy she directed at books, plays, and

movies. She desperately desired to see and experience more of the world (she would have burned with envy at Olivia's opportunities). Life had other plans, however. Children, for instance. And a move to Phoenix, Arizona, which she considered to be a cultural backwater. She took these turns in her road badly. By the time I was ten, she had begun a general retreat emotionally and physically. Prague became a nostalgic symbol of her previous existence. And a beacon. She told me it was her dream to return to the city. She showed me photos that she took and recounted funny stories about traveling in a Communist country. I knew she kept leftover Czech money in a box. We schemed on ways to go the city together some day – plans cut short in 1988 by her death.

Now I had a chance to take the trip for her.

My father also had a story. On my desk sits a cherished metal bookend in the shape of military badge, its blue and red center emblazoned with two trees, two crosses, and a lightning bolt. On its base are the words *Heads Up* and *Berlin 1945*. My father had missed World War II by a whisker. Over his mother's objections, he enlisted in the U.S. Army shortly after turning eighteen on December 25th, 1944. Six months later he was a member of a mobile radio unit patrolling the devastated streets of smoldering Berlin. The few stories he told me about his experiences involved conflicts between American and Russian soldiers, including one about an American serviceman deliberately pushed from a moving train by a Russian just as another train approached from the opposite direction. Luckily, the soldier survived. Another story involved a drunken street brawl

between Russian and American soldiers that he witnessed. He never discussed the physical destruction he saw in Berlin though it must have been a shocking sight to a quiet, thoughtful young man from rural Arkansas. Sorting through his belongings after his death, I found the metal bookend, apparently one of the few mementos he kept from his tour of duty in Germany. I regretted not asking him more questions. His story felt unfinished, so I hoped to pick up a thread or two during our visit.



Berlin 1945

There was another aspect to his time in Berlin that intrigued me. My father was present, literally, at the start of the Cold War, a nerve-wracking conflict that shaped a big part of my life growing up. I was less than a year old when East Germany began building the Berlin Wall. The specter of military conflict it represented, especially the threat of nuclear war with the U.S.S.R., cast a shadow over my youth. The official policy was called ‘Mutually Assured Destruction’ or MAD, a belief that the threat of total nuclear annihilation would keep the U.S. and the U.S.S.R. from starting a war. Naturally, it provoked an arms race – more warheads, more missile silos, more submarines, more long-range bombers, more tension and anxiety, year after year. MAD indeed. This memory was on my mind as we made plans to see Olivia. 2019 marked the 30th anniversary year of the fall of the Berlin Wall, followed quickly by the collapse of Communist rule in Eastern Europe, two events that were as inspiring as they were surprising. The Cold War indelibly marked American culture and politics and I assumed the dreary conflict would go on and on. I was wrong. The crowds of rebellious citizens I saw on television, the hard fall of brutal dictators, and the end of the Soviet Union’s empire, all accomplished over the span of just a few months was amazing to behold. A year later, East and West Germany had reunited as a single nation. Then on December 25th, 1991, the Soviet Union itself dissolved and died – perhaps the most astonishing event of all. This dizzying sequence created a strong sense of hopefulness that verged on giddiness. Democracy had beaten authoritarianism. Berliners standing triumphantly atop the Wall on the morning of November 9th, 1989, is a cherished memory. I had to see the Wall for myself – a remnant of which conveniently resided only a few blocks from Olivia’s apartment.

I couldn't entirely escape the looming shadow of climate change, however. It began with our outbound journey from New Mexico. Our second flight was delayed, causing us to miss the connection to Prague. We detoured via London and by the time we reached the Czech capital ten hours later than planned we had sat on four separate planes. We didn't mind the inconvenience, but I was sensitive to our cumulative carbon footprint, a subject I had researched before we decided to visit Olivia. A single long-haul flight generates more CO₂ than one citizen in a developed nation produces in an entire year by their activities. Worse, airplanes pollute high in the atmosphere which amplifies their contribution to global warming. An estimate I saw said that over four billion passengers would fly in 2019, five percent more than the previous year and up three hundred percent from 1990. Globally, CO₂ emissions began climbing in 2017 after stabilizing for three years in what had been a hopeful sign. In 2018, emissions rose to a new high, which a science reporter characterized as "brutal news." An anti-flying movement in Europe called *flygskam*, a Swedish word meaning 'flight shame,' made headlines in the weeks before our trip. The concept was associated with the teenage climate activist Greta Thunberg who stopped flying years earlier (on July 24th, the day before the heat wave shattered records, right-wing lawmakers publicly mocked Thunberg as she spoke to the French National Assembly in Paris). The issue weighed on my mind. I had not stepped on a plane in eighteen months and had only flown once internationally since 2015. In the end, we decided to go. It was likely our only chance to visit Prague and Berlin – and we wanted to see Olivia!



Olivia and Gen

She met us at the train station in Prague late in the afternoon. It was so good to see her! After big hugs, we purchased espressos-to-go (ah, Europe) and headed to the hotel, located in the center of old Prague close to its historic Town Square. Dropping our bags off, we immediately beelined for the famous Charles Bridge, built in the fifteenth century and one of Europe's must-see destinations. Joining a steady stream of tourists flowing to the bridge, we were accompanied by Prague's mesmerizing architecture. The old town escaped the bombs of World War II and retains much of its medieval character, though most of the ground-level shops have been converted to upscale stores making it feel like an endless mall. We didn't mind, we were just happy to be back in Europe, whose

blend of history, culture, food, and human-scale life appeal to us on so many levels. The July air was soft and fragrant. Working our way to the middle of the crowded bridge, we were soon rewarded with a sunset view of Prague's lovely profile. I tried to imagine my mother and father standing here all those years ago. It was easy to why she loved this city. We found a table at a restaurant at the end of the bridge and settled in. The evening was perfect – the food, the beer, the happy murmur of nearby conversations. An amiable young waiter practiced his English on us. We queried Olivia for more details about her time in Europe, both proud and envious of her many travels. We clinked our beer glasses, toasting the abundant charms of the Old World as well as its many sensible policies (such as a free college education).

Our warm feelings continued over the next two days as we walked ceaselessly, starting with the impressive castle sitting regally on a hill across the river. We ambled through crooked streets, stood in a crowd to watch Prague's famous medieval clock strike the hour, gawked at pedal-powered beer bars packed with young men circling the city, admired the views from a serene island in the river, listened to four men perform on alpine horns, ate pastries in a famous café, and checked out a pretty church. We lingered in Wenceslaus Square, soaking up its history as a gathering place for Czech protest and celebration. In 1918, a proclamation of national independence was read aloud in the rectangular Square; in 1969, a student immolated himself to protest the Soviet occupation of his country; and on November 23rd, 1989, more than 300,000 people packed the Square to listen to dissident Vaclav Havel exhort his fellow citizens to continue their non-violent opposition to Communist rule. Six days later, the government collapsed. Czechoslovakia was free. The transition from decades of oppression to liberation happened with extraordinary speed, a symbol of the strength of democratic ideals. It was a powerful experience to stand on the spot of such a revolutionary moment.

One condition marred our strolling and became its own story. Prague was *packed* with people. It wasn't a surprise. All year, I had been reading news stories about huge crowds in Europe. When Gen and I visited Venice in 2008, the famous sinking city endured eight million international



Crowd in front of the medieval clock

visitors (including us). In 2018, the number had risen to *thirty* million. Nearly twenty million people were expected to visit Paris in 2019, up from nine million a decade earlier. Between 1995 and 2015, the number of visitors arriving in Europe doubled from five hundred million to one billion. There were many reasons for this upward trend, including low oil prices, the rise of budget airlines, the expansion of *Airbnb*, an explosion of Chinese tourists, and the popularity of cruise ships, the largest of which can carry as many six thousand passengers. The carbon footprint of all this traveling is huge. Scientists estimate that global tourism accounts for about eight percent of all greenhouse gas emissions per year. That's a small number in comparison to other sectors of the global economy but it's one of the most visible, as recent photographs of Venice with people packed like sardines made all too clear.

Desiring a break from the crowds, Olivia and I rose before dawn on our last day in Prague and walked to the Charles Bridge. The narrow streets, filled to the brim with people the previous evening, were eerily empty except for a few stray individuals who appeared to be drunk. The silence was unnerving. It felt like the city was holding its breath or had fallen into a deep sleep out of sheer exhaustion. The quiet extended to the Bridge, which was occupied only by a handful of fellow early risers, including three couples in wedding clothes beaming at their photographers. The morning sun had cleared the city's rooftops, bathing the Bridge and river in golden light. When we reached the center, I asked Olivia if I could take a snapshot of her against the skyline. Composing the image on my phone, I was struck by how mature she looked. Although five months shy of her 21st birthday, she seemed older than her years. Maybe people grew up faster these days. Who could blame them? The world that my mother lived in when she stood on the Charles Bridge seems impossibly remote. Outwardly, the view likely looked much the same, but I knew the world had changed in fundamental ways over the course of my lifetime. It was more hopeful in many respects, but more worrisome too, as Olivia knew. What would sixty more years bring?

Later in the day, we made our way to Berlin by train and the next morning we visited the outdoor memorial to the Berlin Wall along Bernauer Strasse, near Olivia's apartment. The long, narrow park includes a section of the original wall and is sprinkled with slender information kiosks that told a staggering story of oppression, defiance, and triumph. Although the nearly impregnable barrier divided Berlin for twenty-eight years it fell overnight on November 9th, 1989. A miscommunication by the East German government sent thousands of East German citizens

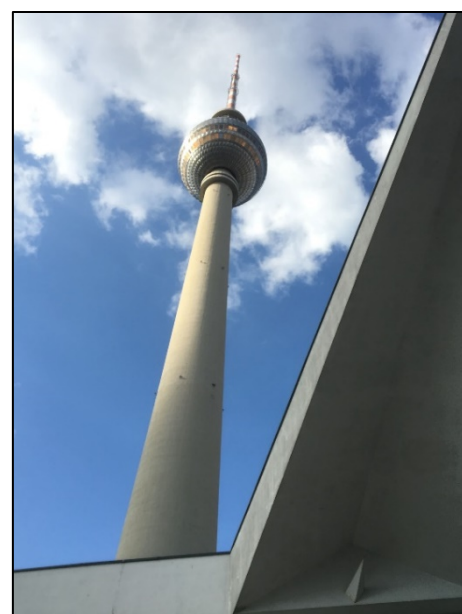


A remnant of the original Berlin Wall

streaming to the Wall. A few hours later, the checkpoints were ordered open – for good. Most of the Wall was demolished and hauled away within a year. A large number of Berliners walked along the memorial, suggesting that memories remain fresh for many people. The story it told about our inhumanity and resilience was repeated all over the German capital. The city was bombed relentlessly by the Allies during World War II and then reduced to rubble by the Red Army as it fought its way into the Nazi capital in April 1945, damaging nearly eighty percent of its downtown buildings. You can still see bullet holes in structures that survived. At the Brandenburg Gate, I tried to imagine what my father felt as he stood here seventy-four years earlier. The Nazi era left scars that run deep in the city, as we saw repeatedly – scars that Berliners

have tried to heal. One of the most impressive was the cemetery-like Memorial to the Murdered Jews of Europe. We visited it late on a drizzly afternoon, wandering somberly among its black stele, contemplating our dark souls.

Clear skies returned the next day, bringing heat. To stay out of the sun, Gen and I opted for a round of museum-going. Our first stop was the famous Pergamon, bringing us face-to-face with six thousand years of history (and the shameful European habit of pilfering antiquities). A slow walk through the National German History Museum barely scratched the surface of the complicated and bloody history of northern Europe. Soon, my head began to swim with stories of empires, gods, elites, revolution, exploration, conquest, enslavement, liberation, art, music, duty, love, exploitation, greed, hubris, reformation, enlightenment, science, propaganda, persecution, genocide, and atonement. If there was one thread through all the exhibits, it was this one: humans haven't changed in six thousand years, not at heart. Our technology has advanced spectacularly, and we have gobs of science but I'm not sure about the rest. Democracy might an anomalous state of



The (East) German TV Tower

affairs, at least from a historical perspective. It certainly requires constant vigilance, as Thomas Jefferson famously noted.

Temperatures continued to climb. By Wednesday, after a full day of walking, I developed a bad-looking heat rash around my ankles. More critically, I was having trouble staying hydrated despite chugging water. We lingered in Olivia's breezy apartment and downsized our sightseeing ambitions. The heat kept rising. No one checked the news. We had intentionally left our laptops behind and were staying off our phones, preferring not to be distracted by the wider world. On the morning of our last day in Berlin, July 25th, we scotched a plan for a quick visit to visit another museum and went out for coffee instead with Olivia. Her time in the city was rapidly ending and she wasn't ready to leave. She grew up in New Mexico and attended college in rural Massachusetts. Berlin had completely dazzled her, opening up a world of possibilities. Finishing our coffee, we returned to the apartment and finished packing. Olivia led us to the train station where we gave her big hugs. It was too soon to say goodbye. Gen and I made our way to the train platform and deposited our suitcases along a wall. The airless terminal felt stifling. Despite the heat, I paced the tracks, restless as usual and eager to get going, even if it just meant heading home. The train arrived on schedule, looking old. We dutifully waited our turn to board, found our compartment, and settled into our seats. It was stuffy. Was there something wrong with the air conditioning? I passed a hand across the air vent at the base of the window.

Something leaked out.

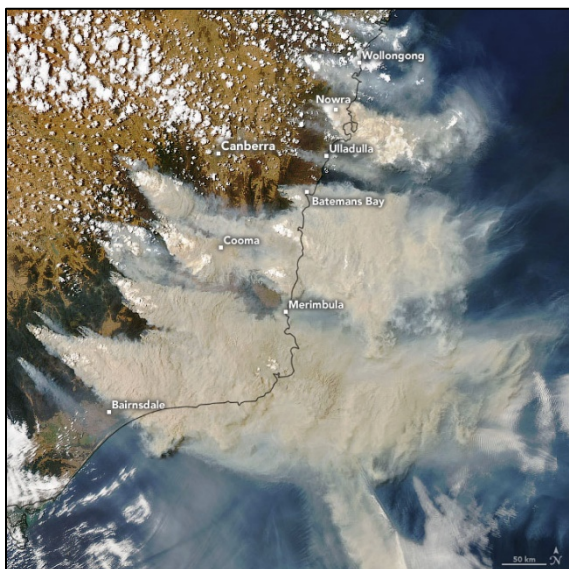


Although it would take seven weeks to find out, July 25th, 2019, was historic for another reason. At 3pm Germany time – as Gen and I were halfway to Prague on the train – President Donald Trump spoke on the phone with President Zelensky of Ukraine and attempted to strongarm him into digging for dirt on former Vice President Joe Biden and his son Hunter Biden for political purposes. The call was secret and lasted only thirty minutes. It would have remained secret if not for an anonymous whistleblower in the U.S. government. When the conversation became public, it ignited a constitutional crisis that resulted in Trump's impeachment by the U. S. House of Representatives in December on charges of abuse of power and obstruction of justice. It was only the third time in American history that a President had been impeached. Trump deserved the dishonor, but the shocks didn't stop there. Trump's frantic attempts to obstruct the impeachment proceedings, the exposure of his brazen corruption, and the dereliction of duty by Republican

leaders in subservience to the President were mind-bending. The mendacity of Trump's pressure on Zelensky was exceeded by his subsequent efforts to disempower Congress.

Unfortunately, it wasn't much of a surprise. Since assuming office in 2017, Trump had behaved in a mind-boggling manner: lies, lawlessness, bullying, arrogance, childish tantrums, deep incompetence, not to mention his deliberate attempts to undermine core institutions of our democracy. Now he had gone too far. I followed the impeachment process closely, wondering what this extraordinary moment meant for our nation. Similar to the record-breaking heat wave in Europe, the word *unprecedented* kept appearing in the news as the evidence against Trump grew. That sounded right. "I can think of no other case in American history that rivals what the president has been accused of," said Jeffrey Engel, director of Southern Methodist University's Center for Presidential History. "They teach us in graduate school not to use the word 'unprecedented' because that means you're a lousy historian, but every now and then that case arises."

Meanwhile, Australia was on fire. Fueled by a multi-year drought, small wildfires broke out in late July and grew to catastrophic levels by early 2020 under scorching temperatures. Fire and smoke engulfed much of the southeastern edge of the continent, choking residents in Sydney and other cities. Ultimately, the fires burned 72,000 square miles of land, consuming more than a third of Australia's forests. They caused the death of at least thirty-four people, destroyed nearly six thousand buildings, and killed as many as *one billion* wild animals including five thousand koalas, one-sixth of the total population. The catastrophe was quickly dubbed the *Black Summer*.



Smoke from Australian bushfires

Bushfires, as Australians call them, erupt nearly every year but the ferocity and devastation of this conflagration was historic on a global scale. The President of the Australian Academy of Science, John Shine, stated that "the scale of these bushfires is unprecedented anywhere in the world." Ironically, the fires were put out by torrential rainstorms that resulted in major flooding, requiring the evacuations of several towns. Sydney experienced its heaviest rainfall in thirty years. Extreme fire and flooding events are hallmarks of climate change. Two months later, an international group of researchers published a report that said human-caused global warming had a major role in amplifying the

Australian fires by creating conditions that were thirty percent more severe than they would have been in a world without the warming.

As the fires died down in February 2020, a new crisis emerged: COVID-19. The highly contagious pathogen spread quickly from the city of Wuhan in China to all parts of the world causing sickness, misery, and death. It disrupted lives, businesses, and entire economies. By mid-March, festivals were being cancelled, sporting events played to empty stadiums, panic spread, stock markets sank, people self-quarantined. Nations locked their borders. Progress in slowing the spread of the highly infectious disease was successful in some places, but failed in others, including the United States. The virus worked its way into every nook and cranny of the planet. While the pandemic itself was not unprecedented – the Spanish Flu in the early twentieth century killed millions of people worldwide – COVID-19 caused historic economic and social damage in mere weeks, including panic buying, food scarcity, and sudden unemployment. Unprepared, the U.S. government scrambled – and stumbled. The medical response was slow. Messages were mixed, allowing misinformation to spread. The confusion and disarray were compounded by President Trump’s inability to act like an adult. Worse, his boundless vanity and political self-interest meant he interfered with medical advice from experts in his own administration. Masks, for instance. In a fatal error – literally – Trump politicized mask-wearing, encouraging his supporters to resist orders from governors and other officials to don the life-saving filters. It was beyond mind-bending. It was absurd and demoralizing. At the very moment when the nation needed strong leadership to unite us against COVID, Trump chose division and stupidity. He insisted the pandemic would “just disappear.” He promised that church pews would be full again by Easter. He predicted deaths would top out at 60,000. He derided scientists, pushed medically dubious treatments, and fanned conspiracy theories. Meanwhile, people kept dying.

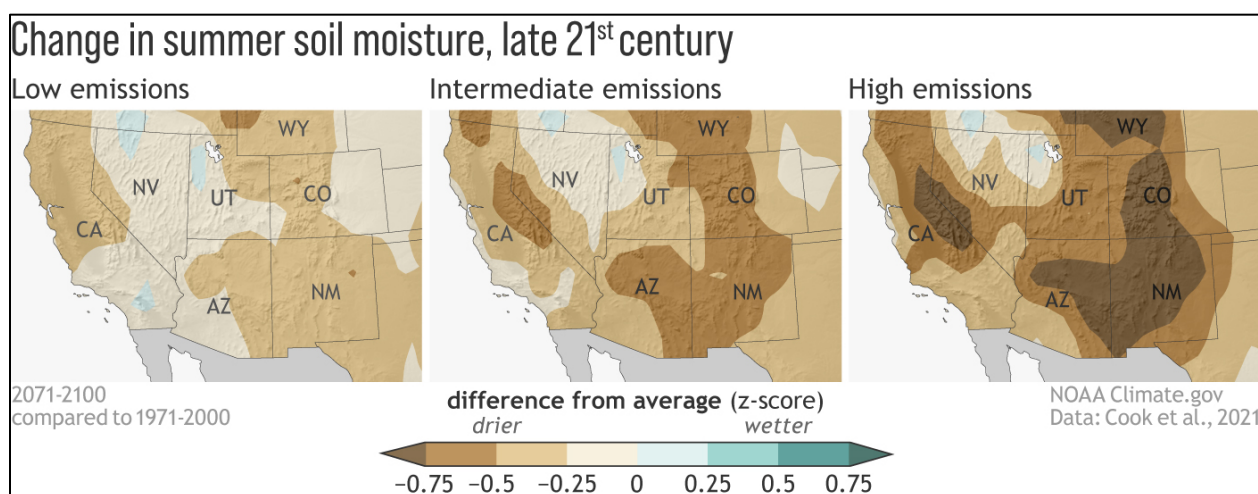
In mid-March, Sterling and Olivia came home from their respective colleges. Olivia arrived first. The hyper-cautious administration of Mount Holyoke College ordered students home at the first signs of COVID in western Massachusetts. Reed College tried harder. All of Sterling’s classes went virtual, confining students to their rooms like prisoners. He could only leave his dorm for short walks outside. Staff delivered meals to the students, leaving the food in dorm dining areas and hallways. Sterling was game if it meant staying in Portland. The bubble didn’t last long, however. COVID crept onto Reed’s campus despite the lock-down. Within a week, the remaining students were ordered home. We were very happy to see them! It was early in the pandemic and

no one had any idea how bad the crisis would get or how long it would last. We were just relieved to have them safe with us. Sterling and Olivia were relieved as well and gave us big hugs. Although they were disappointed they put on a brave face about their altered circumstances. Olivia especially wanted to stay at school. She had transferred to Mount Holyoke after her sophomore year at Hampshire College and was just hitting her stride when the pandemic struck. Zoom classes were not an adequate substitute, she told us. But both of them kept things in perspective. They were aware of their privilege and security in a world enduring immeasurable heartbreak and loss. Hopefully, things would return to normal soon – whatever normal meant now.

For me, the pandemic was not terribly disruptive. As a writer, I self-quarantine anyway. My routine didn't change very much. When the State of New Mexico sent everyone home to work remotely, Gen moved her office to the dining room table. The kids reoccupied their rooms. Life resembled old rhythms. It was cozy. We were happy. In a fortuitous coincidence, the same month the pandemic began I was hired by Paul Hawken to be the senior writer on a book project he was undertaking titled *Regeneration: Ending the Climate Crisis in One Generation*. It was a follow-up to his best-selling *Drawdown: the Most Comprehensive Plan Ever Proposed to Reverse Global Warming*, published in 2017. I loved *Drawdown*. It was full of proactive solutions, similar to what I had been writing for years. Paul told me *Regeneration* would be even better. The timing was perfect: quarantine, Gen and the kids at home, New Mexico skies.

There was just one problem – where was it all going? The pandemic felt like the latest and largest exclamation point in a world under siege. I couldn't shake the feeling that a threshold of some sort had been crossed recently, possibly irrevocably. Donald Trump was part of it but with luck he would be out of a job within a year. The real question was whether the political cancer that he represented would metastasize into something much more threatening or somehow be cured. The latter seemed unlikely. A related worry involved the hyper-partisanship that had consumed the nation, stoked by the snake pit of social media. I'm not sure how it became so prevalent, but I blame Newt Gingrich for starting it. He led the so-called 'Republican Revolution' in the 1994 mid-term Congressional elections that propelled him to the House Speakership. To accomplish his ambitions, Gingrich employed scorched earth political rhetoric that was shocking at the time. You can't say those things about your opponent! You can't push cultural hot buttons like that! I prayed Gingrich's deeply cynical strategy would be temporary, but twenty-six years later it's clear that our politics had crossed a threshold with no going back.

However, the bigger part of my crossing-the-threshold feeling involved heat waves. I knew they were now a permanent part of the new climate normal. It wasn't just hot temperatures. New Mexico was stuck in a grinding drought that was part of the same hotter-and-drier pattern afflicting other parts of the world. Researchers said we would never get unstuck. Some years might be a bit wetter, but the overall trend was very clear. The Southwest has always endured droughts, but according to a 2019 study by the National Oceanic and Atmospheric Association climate change will make them significantly warmer and last longer. That's because prolonged droughts deplete moisture in the soil, thereby reducing its ability to cool the air as it evaporates. The lack of soil moisture amplifies temperatures at ground level which, in turn, supercharge heat waves.



The outlook for future heat waves in the Southwest. Which 'new normal' will prevail?

“When we modeled conditions of moderate or severe drought, we found that heat waves in the climate of today were appreciably worse than they were in the climate of 100 years ago,” said co-author Martin Hoerling. “What this tells us is that droughts occurring in our warmer world will produce hotter temperatures than the same droughts in our forebears’ cooler world.” That’s the problem with thresholds once you cross them it’s nearly impossible to go back.

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When Gen and I reached the Prague train station after our hot ride, we decided to ditch our luggage and head outside. We wanted to see the Charles Bridge one more time. Our original plan had been to catch a taxi and go to our hotel near the airport and prep for an early flight home the following morning. Upon arriving in Prague, however, we realized we weren’t ready to leave. We

love Europe and weren't sure when we might return. It was late afternoon, so there was still plenty of sunlight for our little adventure – and lots of stifling heat. We crossed a major boulevard and plunged into a narrow street, keeping to its shady side. In our haste, however, we had left our maps in the luggage, which we quickly regretted. We made our way by feel, zigzagging toward what we hoped was the old town center. Before long, we were rewarded with a sign of progress: the streets began to thicken with tourists! Edging our way into a big intersection, we were relieved to see the famous Powder Tower, an attractive remnant of the city's 15th century fortifications. I knew where we were now. We paused in the shade of a nearby building to rest and enjoy a small eddy of calm amidst the river of people and traffic and heat. Incredibly, the temperature hadn't made any apparent dent in the size of the crowds. People wore more shorts and sandals than before, possibly. Adjusting our hats, Gen and I pushed on.

We drifted with the current to Prague's old Town Square, feeling like two boats bobbing along on a sunny day. As we entered the lovely space, close to our former hotel, I was struck suddenly with a powerful feeling of nostalgia for our previous visit just a few days earlier. I was surprised by the feeling's intensity. I'm a natural sentimentalist, easily besot by memories. They can be provoked by nearly anything: photos from family trips, birthday mementos, children's toys discovered in the back of the closet. Normally, the memories need to age a bit, like a bottle of wine, before achieving their full potency. A few years were usually sufficient. But a week? That set a new benchmark. It was kind of ridiculous, in fact. But there it was, grabbing at my throat. It was partly about missing Olivia, of course, though we would see her back home in a few weeks, so it was also something bigger. As we crossed the Square, I tried to puzzle it out. Was my nostalgia brought on by age? Gen and I turn sixty in 2020, a number that once seemed absurdly far away. Now it was knocking on our doorstep. We joked it meant entering the 'fourth quarter' of life – a life, in our case, that had been a thrilling adventure at so many levels. Was that the source of my nostalgia? Hopefully, I could expect a few more adventures.

We plunged back into Prague's narrow streets, working our way to the Charles Bridge by a familiar route, past fancy stores, beer bikes, and knots of tourists. My perplexing feeling of nostalgia grew as we walked. The sentiment is often linked to loss – youth, a loved one, a favorite place, a time. What had I lost in a week? A memory swam into my mind. We sat with Olivia in the shade of the church on the castle hill on the first day of sightseeing, our backs against the stone wall, casually eating cashews and raisins that we had brought from Santa Fe. We people-watched

as crowds drifted by. It was warm and sunny. We were happy. Another memory followed, of a walk along the river's edge at dusk. It was an ordinary walk that stood out only for its pleasantness. But here I was, wanting to relive it. Turning a corner, Gen and I followed the flow of humanity onto Charles Bridge, edging toward the center of the structure, both of us feeling tired from the heat and crowds and the long journey on the train. Spying a small gap along the railing on the south side of the Bridge, we moved quickly to occupy it. Gazing out over the Vltava River, the nostalgia returned in force. In the middle of the river a short distance away sat the small island that we had explored the previous week. At the time, we stood at the island's tip admiring the view of the Bridge. I gazed back from where we stood, wanting very much to see the three of us on the island enjoying the view once more.

What was going on? Standing there, one answer suggested itself: I was looking at the other side of the heat wave. Although details about the record-smashing heat would come later via the BBC that evening and in news articles and scientific analyses in the days to follow, I suspected its implications were serious – yet another sign of things to come if we didn't mend our polluting ways. On a personal level, it felt like its own little threshold. Normal/not normal. Yesterday/today. Down on the island, however, all was well. I could see Olivia, her hands in her coat's pockets, content. I felt an ache. Olivia had things my mother craved – freedom, opportunity, a better and safer world for women. My mother had the Cold War, of course, and all the anxiety that went with it. What my mother didn't have was a future of hotter and longer heat waves. The threat of nuclear annihilation was an existential one, but it was a political problem not a geophysical one. We avoided catastrophe during the Cold War by *not* acting – not turning a launch key in a missile silo. Heat waves are fueled by *inaction*. If we do nothing, they get worse. It's not Olivia's fault or the fault of anyone in her generation. It's our fault. That's why handing them the bill for sixty years of hard partying is so wrong in so many ways.

However, standing there looking down at the three of us on the island, I realized that the future wasn't the main source of my nostalgia. It was the past. I recognized the ache in my heart: I missed raising children. *A lot*. The time we spent with Olivia recalled the many travel adventures and explorations we did together as a family – ranches, farms, forests, muddy creeks, Yellowstone, Los Angeles, European castles, campgrounds, Disneyland. The kids' gosling years were especially memorable. I loved organizing trips and then holding their hands as we explored our destinations together. It was all new and exciting. It made me deeply happy. Even as Sterling and Olivia grew

older and began to be more independent, we would still find time to explore places together. Eventually, it became time for their college adventures, forcing Gen and I to cross that bittersweet threshold. It was alright. I get it. It's an ancient cycle. Kids grow up and move on. I did. I understand that the fourth quarter of life is different, less full and satisfying than the earlier quarters. Still, the ache in my heart remained. For a short moment last week, the world stopped as we explored together one more time. Olivia and I had our sunrise adventure together on the Charles Bridge. Too soon, the world started up again. I raised a hand and waved at ourselves down on the small island. Then I turned.

It was time to go home.



Olivia



Photos by Courtney White.

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