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EXTREME SUMMER

Summer in America is becoming hotter, longer and more dangerous

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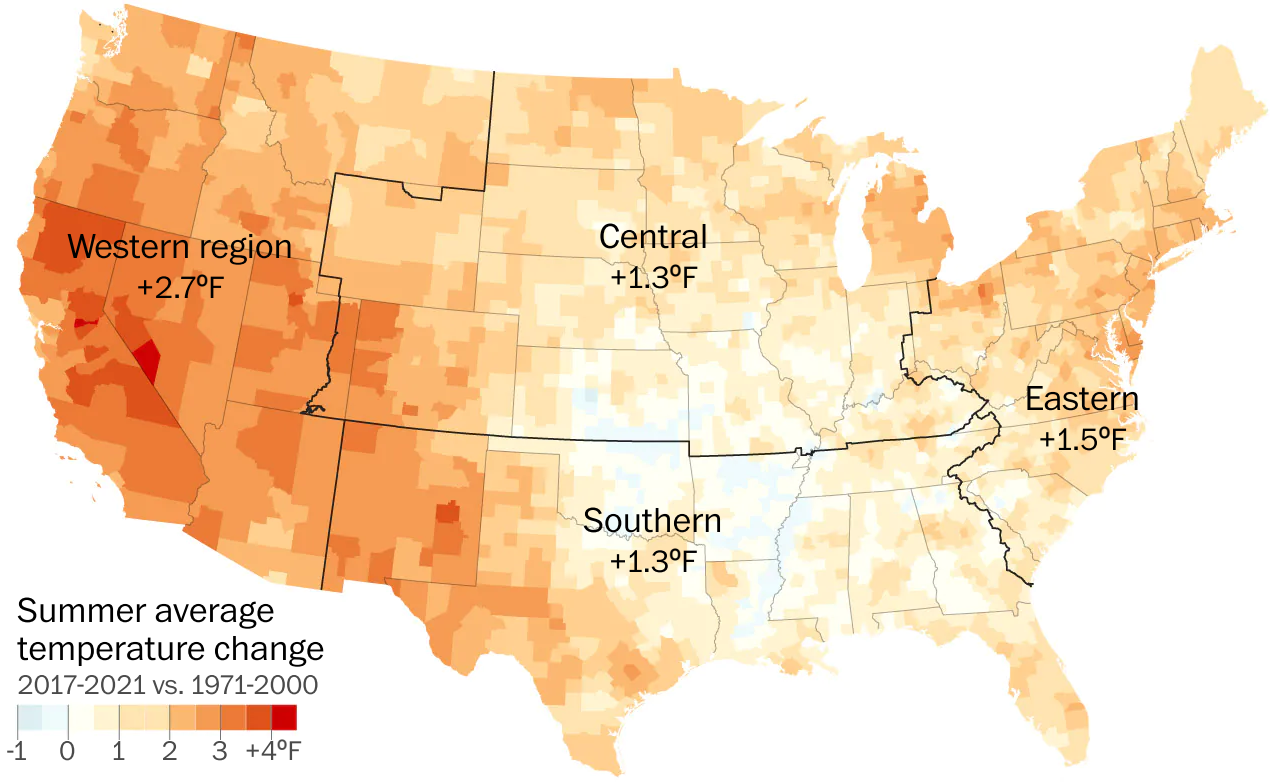

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m above the smoke. But instead of the blue skies that had greeted her on countless trips throughout her life, she arrived to find smoke hanging in the sky and creeping through the valleys below. It smelled like a campfire, but those had been banned for the season.

“If it’s like that again this August, we are escaping,” she said.

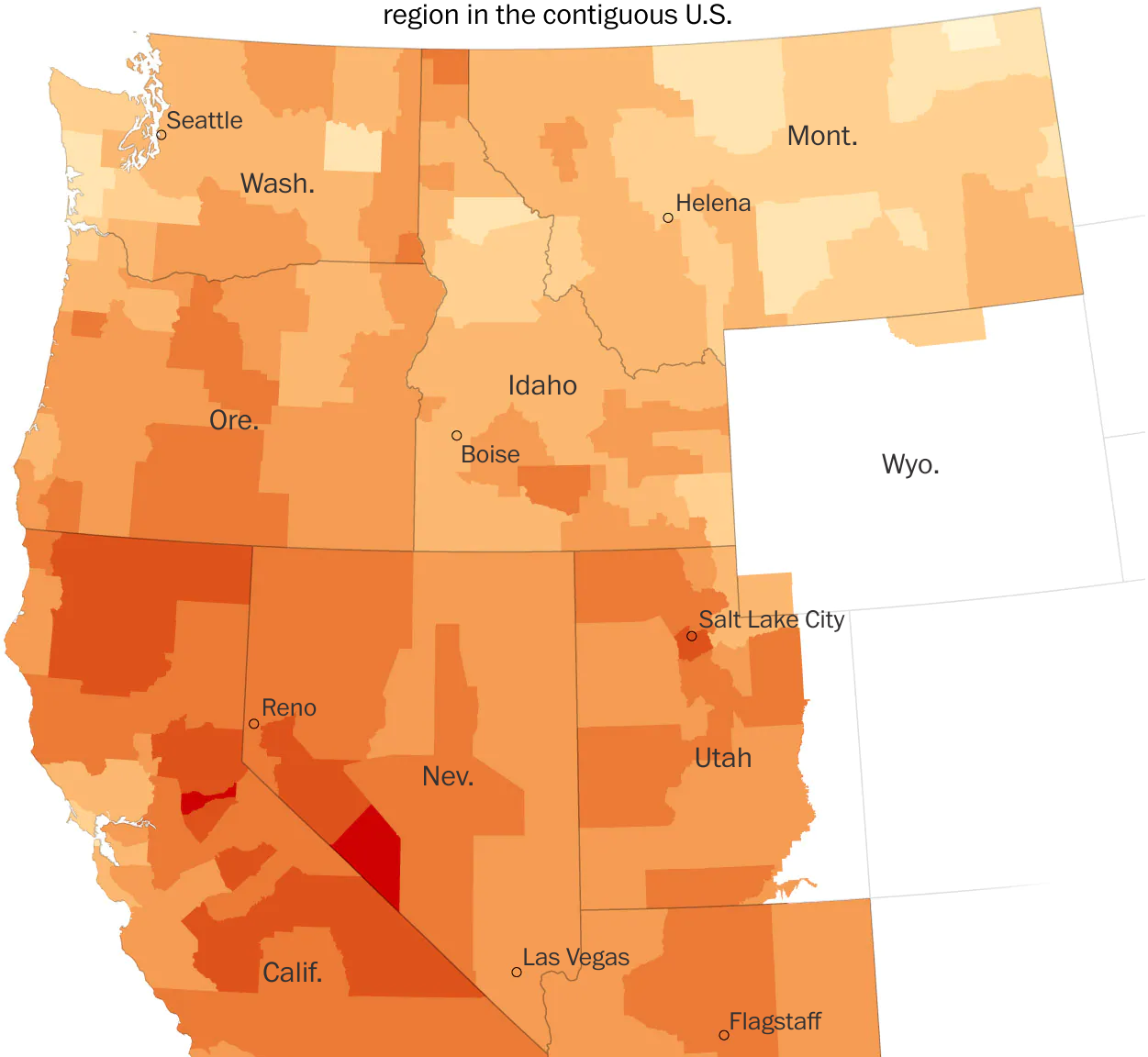
Summer temperatures in Reno have risen 10.9 degrees Fahrenheit, on average, since 1970, making it the fastest warming city in the nation during the hottest months, according to an analysis by the nonprofit research group Climate Central. For two consecutive summers, smoke from blazes burning in California has choked the region, sending residents to the emergency room, closing schools and threatening the tourism industry.

It is among the sharpest examples of how climate change is fundamentally altering the summer months — turning what for many Americans is a time of joy into stretches of extreme heat, dangerously polluted air, anxiety, and lost traditions.

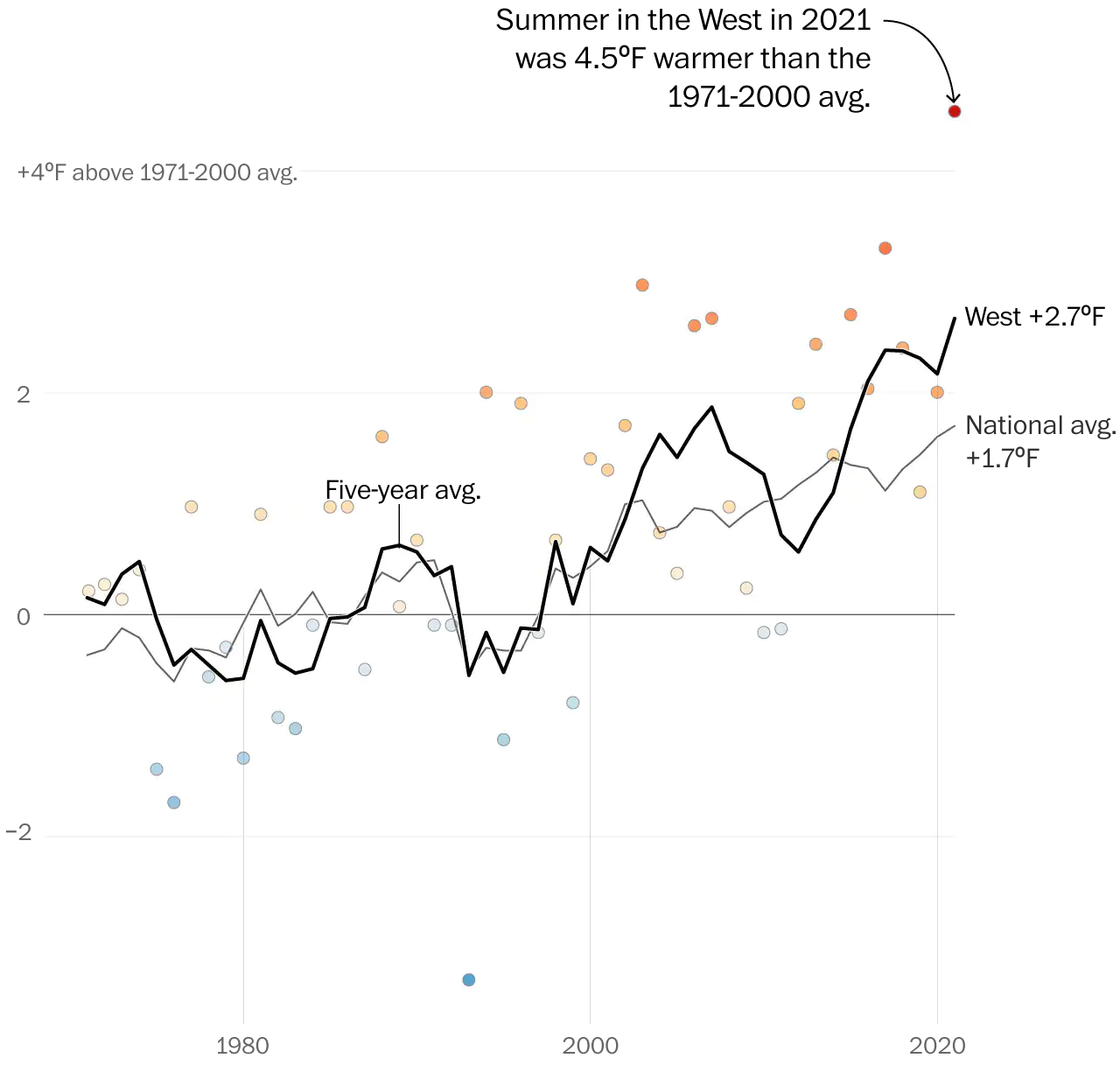
Though the summer season of 2022 is young, parts of the nation already have experienced punishingly high temperatures, extreme drought, wildfires, severe storms, flooding or some combination. Projections from federal agencies suggest more abnormally hot weather, an expansion of drought and well above average wildfire and hurricane activity in the months ahead.

Western region

The past five summers in the National Weather Service's western region averaged 2.7°F warmer than 1971-2000, more than any other region in the contiguous U.S.



Scientists say the recent spate of severe summers is a clear change from previous generations. The average summer temperature in the past five years has been 1.7 degrees (0.94 Celsius) warmer than it was from 1971 through 2000, according to a Washington Post analysis of data from the National Oceanic and Atmospheric Administration. But some parts of the country have been much harder hit, with the West showing a 2.7 degrees (1.5 Celsius) increase.



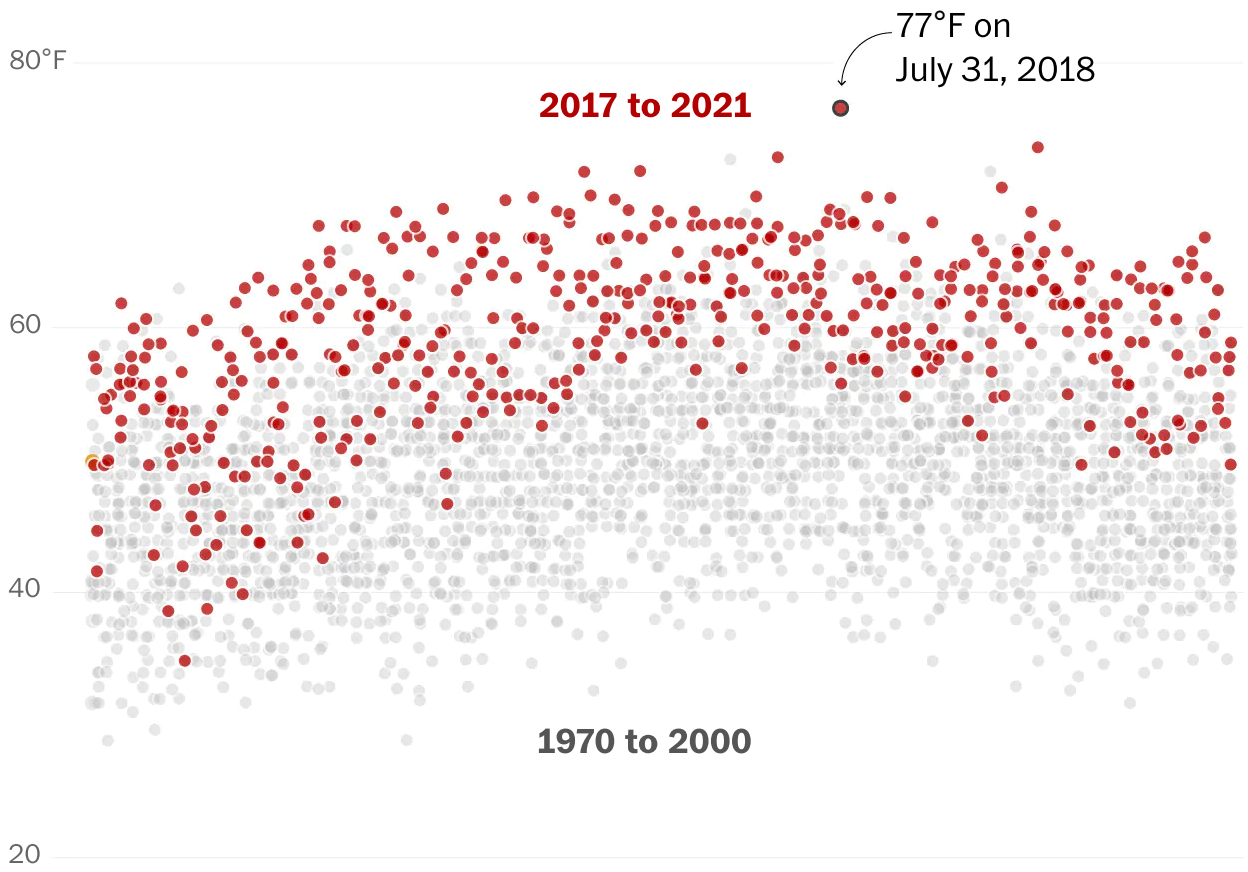
“The past few summers, we’ve just seen such a constant parade of one climate-related event after another,” said Kristina Dahl, principal climate scientist at the Union of Concerned Scientists, an environmental advocacy group. “This really does strike us as a point where we need to be shifting our thinking about summer and how we are approaching it.”

Summer has always been a turbulent season, a time of checking weather forecasts and watching the skies. And despite the major shifts that have taken place, many people still relish the season. Vacationers still flock to places that now face some degree of wildfire or flood risk. But climate change is increasingly pushing summer to extremes, creating inhospitable conditions and endangering lives.

While these climatic shifts are occurring year-round nationwide — in fact, in many areas, it’s getting warmer faster during other seasons — the summer is often when the effects cascade. The temperatures are higher, so any increase may be felt even more strongly. And people are more likely to spend extended time outside, exposed to the elements.

Across the country, heat waves are arriving more frequently, more intensely and earlier in the year. Nights are warming at a slightly higher rate than days in most parts of the United States, according to the most recent National Climate Assessment, harming people’s ability to cool down after hot days. A Climate Central study found that in just more than half of cities analyzed, high-heat days arrived at least a week earlier, on average, than 50 years ago. Three-fourths of places had more “extremely hot” days.

Summer overnight low temperatures in Reno



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In the West and Southwest, the wildfire season is lengthening, and a historic drought is emptying reservoirs. On the East Coast, hotter-than-usual temperatures are contributing to more severe flooding and heavy downpours. As hot weather arrives, the nation's electric grid is under growing strain, with regulators from the Midwest to the Southwest warning of rolling power outages this summer.

This year, the National Weather Service's Climate Prediction Center's three-month outlook through September suggests there will be hotter-than-normal temperatures throughout much of the country, with a punishing heat dome building over the western and central U.S. in coming days.

As heat bakes the country, drought is expected to grip parts of the nation's Corn Belt and the Middle Mississippi Valley. The country is also facing the likelihood of another active wildfire season and the seventh straight above-average Atlantic hurricane season.

Global warming is driving the shift to hotter summers, experts say, but urban growth is also to blame. The three fastest-warming cities — Reno, Las Vegas and Boise — are expanding outward. As new homes are built and more asphalt is poured, these cities are absorbing and retaining more heat than the undeveloped land around them, said Nevada state climatologist Stephanie McAfee. Scientists call this the urban heat island effect.

"Increasingly, Las Vegas is seeing nights where it's only cooling into the upper 80s," McAfee said. "There are people in Southern Nevada who are doing the calculus of keeping the air conditioning on versus making budget cuts."

The consequences of scorching daytime temperatures and nights without relief were on vivid display last year, when a historic heat wave in the Pacific Northwest sent temperatures climbing more than 30 degrees higher than average. Portland broke records three days in a row, peaking at 116 degrees. According to official estimates, the heat wave killed nearly 200 people in Oregon and Washington.

"Our imagination for what the impact could be has been completely changed," said Steven Mitchell, medical director of the emergency department at Harborview Medical Center in Seattle.

"So many of us saw a career's worth of heat stroke and heat illness in a matter of hours," Mitchell said. "We began to treat it like a multi-casualty event."

Those hit hardest, he said, were the most vulnerable — the very old, the very young and low-income residents who had the least access to cooling.

“On the hottest day, we had more calls to our 911 system than at any time in the history of the 911 program,” Mitchell said. “A huge portion of those were for heat-related impacts.”

These days, the hospital and others in the area are working to prepare for the next severe heat wave. Mitchell said he attends a weekly check-in call with hospitals in the region to make sure they have a plan to prevent any one facility from getting overwhelmed. And he said hospitals are working more closely with emergency responders to improve monitoring for a rise in heat-related cases.

Summertime in the Pacific Northwest has always been referred to as “trauma season” by hospital staffers, Mitchell said, because more people are on vacation, outdoors and more likely to get injured. But the prospect of extreme heat has added another dimension of worry.

“It just strains our system more than it already is,” Mitchell said. “There is a certain amount of trepidation as we move into the summer months.”

Researchers have found that some heat waves in recent years, including the one that struck the Pacific Northwest last year, would have been virtually impossible without human-caused global warming.

“We can start saying people are dying because of climate change,” said Kristie Ebi, a professor of global health at the University of Washington. “This is really shifting the kinds of statements we can make.”

In other parts of the Southwest, communities are bracing for the prospect of flash floods.

In Flagstaff, Ariz., a gateway to the Grand Canyon and other local attractions, summer signals the arrival of the monsoon season.

But the rains, which would typically be welcome in a region suffering from drought, have lately inspired anxiety and fear. Last year, heavy rainfall over recent wildfire burn scars sent torrents of water, mud and debris into the city, damaging homes and forcing residents to evacuate.

This year, the Tunnel Fire, a fast moving wildfire, swept through the Coconino National Forest in April, fueled by high winds and a years-long drought. More than 700 homes were evacuated. Another wildfire burned about 26,500 acres just six miles north of the city last month.

“It’s a totally different environment out there these days, and it’s not like it’s going to get back to normal anytime soon,” said Flagstaff City Manager Greg Clifton. “This community is remarkably resilient, but you have to wonder how far that resiliency can go.”

As he spoke late last month, Clifton was driving through a neighborhood fortified with piles of sandbags. City officials had issued a news release urging people living near the recent wildfires to immediately buy flood insurance. Once again, Flagstaff was preparing for an unpredictable wet season, not knowing if the rains would be gentle or would wash away the roads.

For the last several years, some cities in the West have replaced their Fourth of July fireworks displays with shows put on by drones equipped with color-changing lights over concerns about fires. Flagstaff is switching to a laser light show this year. Elsewhere, fire officials are urging people not to set off fireworks at home.

Barbeque restrictions have also become commonplace, as have summertime bans on campfires in national forests during dry, breezy weather.

The cascading effects of climate change have also left their mark on summer camp, a cherished ritual for millions of Americans.

In the Northeast and parts of the Midwest, rising summer-time temperatures and increasing rainfall have caused camp directors and summer youth program organizers to worry about heat stress, higher utility bills and flooding, in addition to the usual scrapes and bruises.

Stephanie Koch, CEO of the Boys & Girls Club of Atlantic City, said increasingly volatile weather is stretching her organization’s budget. In the last two years, the club has purchased flood insurance for two of its three buildings for the first time — it couldn’t afford to insure the third.

It is seeking donations to cover the cost of water bottles for about 300 campers, as well as soaring electricity bills from energy price spikes and having to run the air conditioning more often. Training for camp staff now includes conversations about flexibility and patience with schedule changes.

“I’m third generation to this area and I’ve seen incredible changes,” Koch said. “When you live on a barrier island, you’re focused on weather all of the time. But now it’s a matter of asking: Where are you going to be located? What buildings do you need flood insurance on? My own house was damaged by Hurricane Sandy and is now 12 feet off the ground.”

On the shore of Lake Tahoe, the University of Nevada, Reno offers a sleep-away 4-H camp that has embraced a sense of cautiousness. Last year, the Caldor Fire, a huge blaze that became the 15th largest in California's recorded history, burned more than 200,000 acres near the lake. The group had to cancel one program and reschedule another.

Kenny Haack-Damon, the state's 4-H Camp education program coordinator, said campfires have become a thing of the past. Instead, campers build solar ovens, using cardboard boxes lined with tin foil to cook their s'mores. He said the biggest challenge is to figure out which outdoor activities can still be done safely, and which lessons might best be taught indoors.

"The point of camp is to be outside as much as possible," Haack-Damon said. "It's hard to think about what that's going to look like as things get warmer or wildfires become more of a threat."

About this story: *County and regional temperature data is from the Monthly U.S. Climate Divisional Database (NClimDiv) maintained by the National Centers for Environmental Information (NCEI). Reno temperature data is from the Reno-Tahoe International Airport station via The Global Historical Climatology Network daily (GHCNd), also maintained by NCEI.*