Lenzi, Chelsea

From: Jefferson Litten <jeffersonlitten@gmail.com>
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Attachments: California climate change_ Fires, floods and a fight over free parking - Washington Post.pdf

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Thanks,

Jefferson Litten

2°C: BEYOND THE LIMIT

Fires, floods and free parking: California's unending fight against climate change

By **Scott Wilson**
Photos by **Michael Robinson Chavez**
Graphics by **John Muyskens**

DEC. 5, 2019

SANTA BARBARA, Calif. — When the fire came this time, blowing in fast and ashy from the dry hills around her camping resort, manager Terri Bowman was ready.

The past few years had prepared her for what had once been unthinkable. First, the Sherpa Fire scorched the hills around the camp in June 2016. Then, unusually heavy rains sent a wall of mud through El Capitan Canyon in January 2017, washing two camp buildings and a car into the Pacific Ocean. The resort closed for four months.

Bowman spent $250,000 shoring up the steep, loose hillsides of the canyon, which gives the resort its name. She also bought generators that she put to use in September, when Southern California Edison cut off power for a day to reduce the risk of fire.

Then, in late October, plumes of smoke from the Real Fire appeared above the canyon walls. Bowman and her staff hurried from cabin to yurt to cabin, telling guests to leave. They dialed cellphone numbers collected as part of an emergency evacuation plan at check-in. They guided cars and buses along a one-lane road toward the highway, including a class of first-graders forced to cancel a weekend retreat.

The only casualty was her bottom line.

“We just kind of shifted into action, we were so used to it,” said Bowman, resigned to the new realities in the canyon where she has done business for nearly two decades. “Relatively nothing happened here until 2016. Since then, it has been an annual event.”

Life in Southern California, once as mild and predictable as the weather, is being transformed as the climate grows hotter, drier and in some regions windier, fueling more intense wildfires, deadly mudslides and prolonged extreme drought.

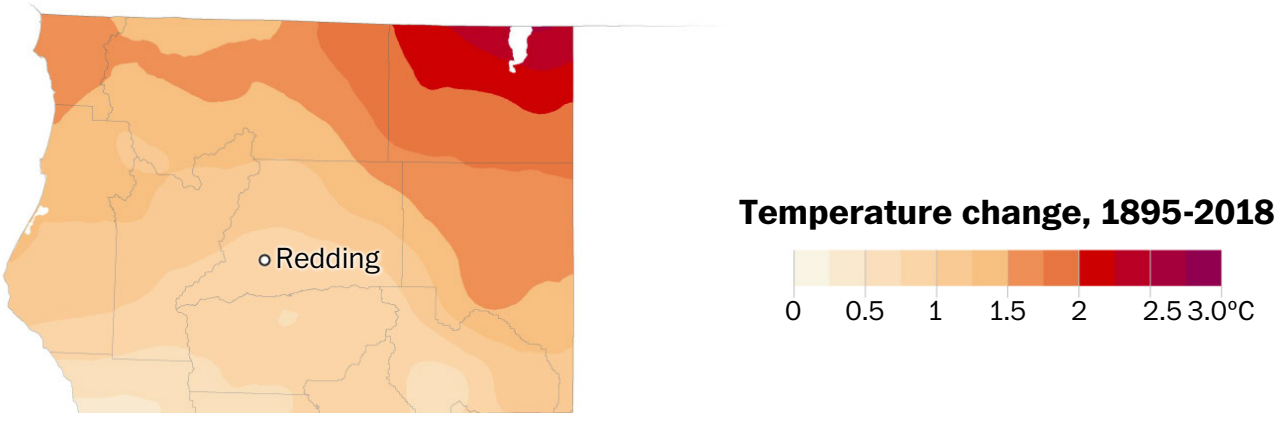
The changing natural world is in turn forcing a fundamental social reckoning, altering the choice of crops on some of the nation's most bountiful farms, erasing the certainty of electrical power in some of its wealthiest homes and exposing the limits of environmental activism among some of its most liberal voters.

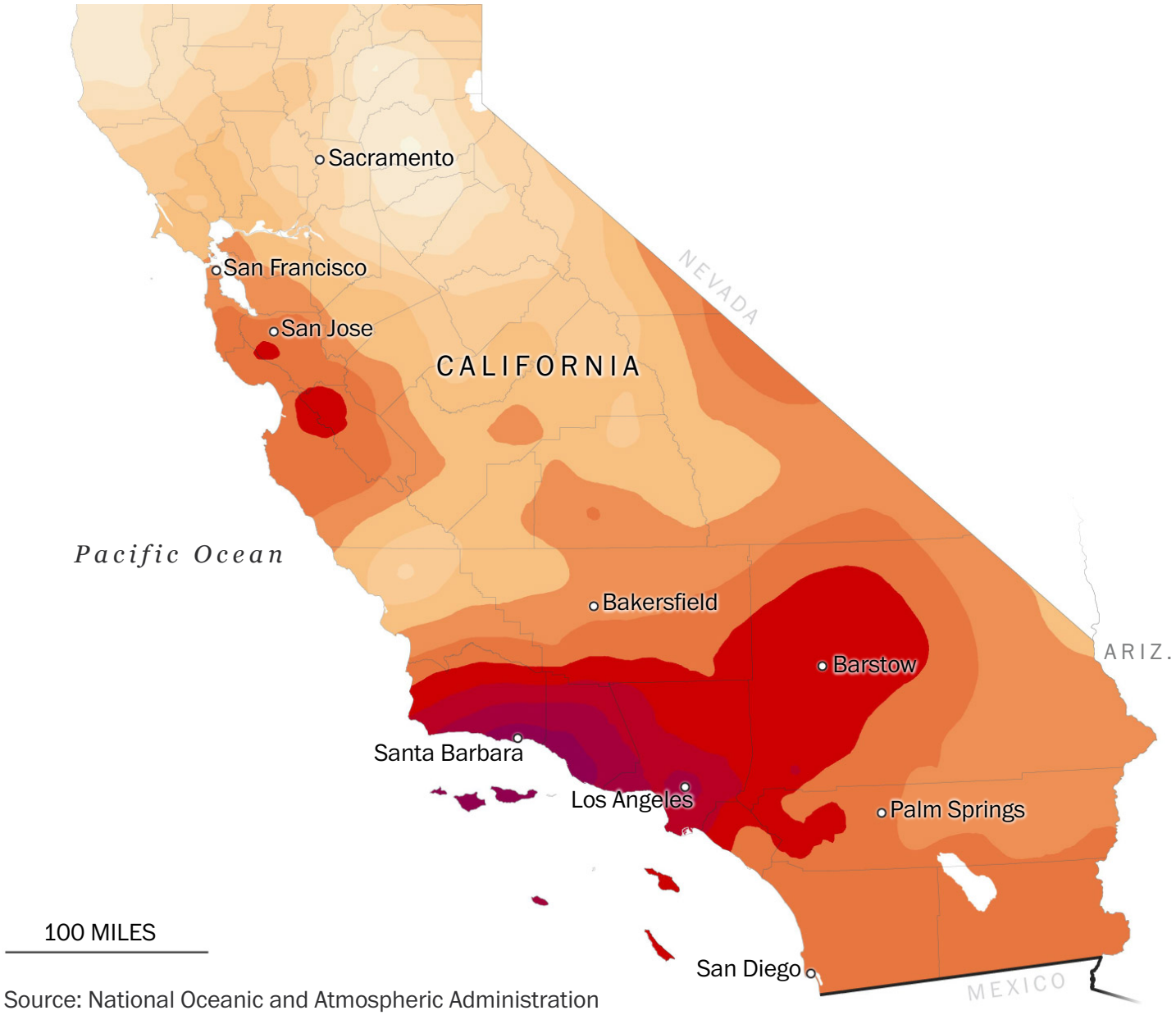
The cradle of the Earth Day movement is confronting the consequences of a warming Earth.

The coastal curve that bends south from Santa Barbara through the Los Angeles metroplex to the arroyos along the Mexican border is warming at double the rate of the continental United States, according to a Washington Post analysis of more than a century of temperature data. And during the past five years, the pace has accelerated.

Click any temperature underlined in the story to convert between Celsius and Fahrenheit

Since 1895, the average temperature in Santa Barbara County has warmed by 2.3 degrees Celsius, according to The Post's analysis. Neighboring Ventura County has heated up even more rapidly. With an average temperature increase of 2.6 degrees Celsius since preindustrial times, Ventura ranks as the fastest-warming county in the Lower 48 states.





Source: National Oceanic and Atmospheric Administration

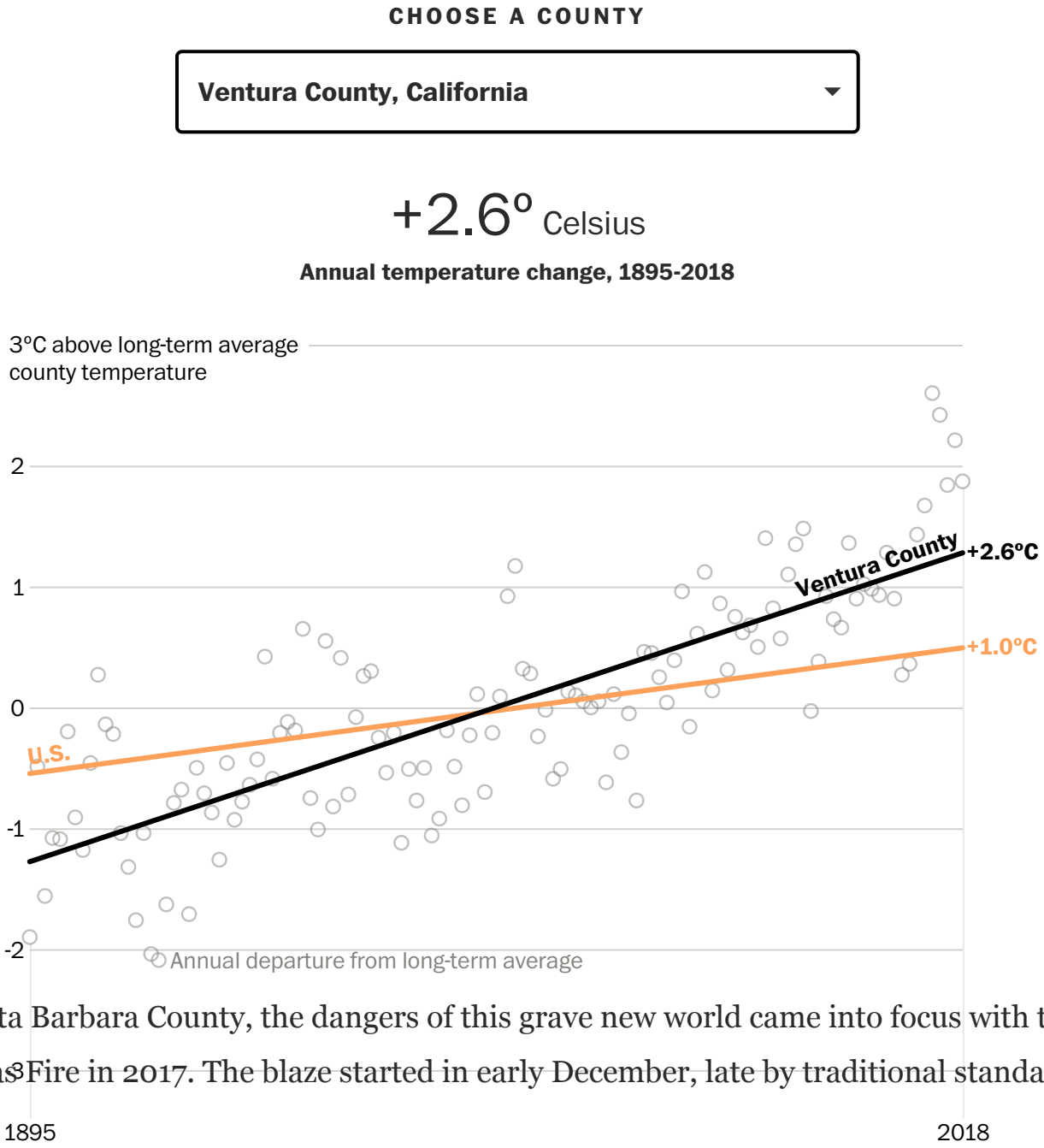
Warming here already has exceeded the threshold set in the 2015 Paris climate accords, which President Barack Obama joined and the Trump administration has promised to leave. The agreement concluded that average warming worldwide should be held "well below" 2 degrees Celsius to avoid potentially catastrophic consequences — but it already has warmed by more than 1 degree Celsius.

Across California, the growing heat and loss of moisture threatens the iconic coastal redwood forests and the Joshua trees of the southern desert. Bird populations have been ravaged by drought, with several once-prominent desert habitats losing 43 percent of

their species in the past century, according to a study published last year in the Proceedings of the National Academy of Sciences.

Offshore, the warming ocean has depleted once-expansive kelp forests around the Channel Islands and has thrown oyster, crab and urchin harvests into disarray.

Thirteen whales washed ashore dead this year in the San Francisco Bay area, and when marine biologists went searching for answers, they found that many of them had empty stomachs.



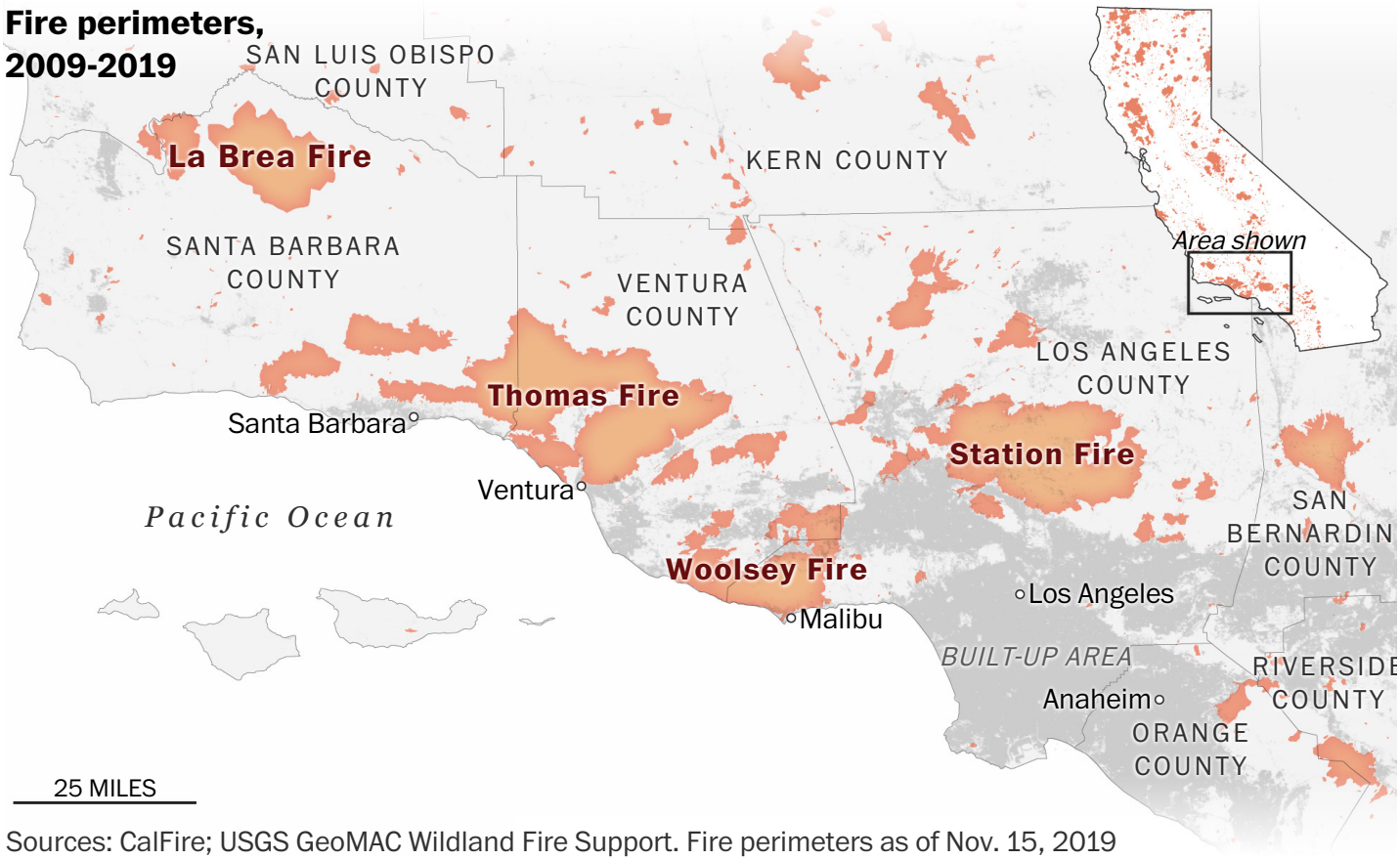
In Santa Barbara County, the dangers of this grave new world came into focus with the Thomas Fire in 2017. The blaze started in early December, late by traditional standards

and a sign that the fire season is now effectively year-round. It was the largest in state history at the time, burning more than 281,000 acres.

Residents were forced to evacuate at the height of the holiday season in the wealthy, woodsy suburb of Montecito. Many were just getting back home when a severe storm forecast prompted a second evacuation order. Tired of living in hotels or crashing with friends, many people ignored it.

Stripped by fire, soaked by rain, the steep hillsides above town collapsed in the predawn hours of Jan. 9, 2018. The torrent of earth killed 23 people, carrying some out of their houses and all the way to the sea.

The twin disasters caused more than $2 billion in damage and focused attention on the shifting climate.



Sources: CalFire; USGS GeoMAC Wildland Fire Support. Fire perimeters as of Nov. 15, 2019

“Before the fire and flood, people here thought of climate change in similar ways as they thought of the refugee crisis in other parts of the world — something important but

remote," said Santa Barbara County Supervisor Das Williams, whose district was hit hard by the fire and its aftermath. "Now, I'm confronted with the fact we had a mass casualty event that was climate enhanced."

The possible remedies are improvisational — and, so far, largely ineffective.

Despite Santa Barbara's heritage as the birthplace of the modern environmental movement, the county is falling far short of its own anti-pollution goals, which are meant to serve as a model for others to follow. The failure has activists here wondering: If a place with Santa Barbara's predominantly green electorate and political class is unwilling or unable to change, who will?

This is a tourist town, a weekend resort for the Los Angeles wealthy, a place that has become shorthand for getaway glamour thanks to a once-popular daytime soap opera named for it. Several years ago, the county adopted goals consistent with California's overall target to cut the greenhouse gas emissions that cause global warming to zero over the next 25 years.

But the government here has bumped up against local business interests, from downtown retailers and restaurants to the oil industry, that oppose more environmental regulation and even such seemingly minor changes to civic life as a reduction in downtown parking. Those interests are often decisive in determining local elections.

The results, so far, have been dismal. In 2015, the county pledged to reduce greenhouse gas emissions by 15 percent compared with 2007 levels. Two years later, a progress report found that, rather than reducing those emissions, Santa Barbara was actually exceeding its 2007 levels by 14 percent.

"The city's legacy tells a story about how progressive it is on environmental matters," said Leah Stokes, a political science professor at the University of California at Santa Barbara, who specializes in energy and environmental politics. "But in our own backyard, we are not nearly as progressive as we think."

The Thomas Fire in December 2017 was the first sign that Santa Barbara's climate had changed and that wildfires had become more severe. It burned 281,000 acres and heavy rains a month later killed 23 people. (Stuart Palley for The Washington Post)

A state of change

Along Santa Barbara's Del Playa Drive, the cliffs above the Pacific Ocean are disappearing with the rising sea.

One apartment building, popular with UCSB students, was condemned three years ago after the cliffs beneath it crumbled into the water. Last fall, the city's planning department said in a report that, unless conditions change, erosion could claim up to 78 percent of the city's bluffside beaches by 2060.

Reilly Ehrlich, a senior psychology major, waited several years for a spot in her apartment at the edge of a precipice, now so eroded it is being braced by netting. By the hammock and barbecue out back is a sign attached to the fence. It shows a stick figure falling backward off a cartoon cliff, warning people to keep their distance.

“It’s crazy waking up to this view,” Ehrlich said, the blue Santa Barbara Channel sparkling behind her. “But we always talk about how this house will not be here in 20 years.”

Scientists have no clear answer for why this region is heating up so fast. But they say a century of urbanization in Los Angeles and Orange counties probably plays a role, bringing more traffic up and down the region’s single north-south coastal highway.

Temperature inversions — the appearance of a layer of warm air in the upper atmosphere — are commonplace regionwide but today hold in the larger amounts of smog and heat. Scientists here say the warming waters offshore are beginning to resemble tropical oceans that, according to local fishermen and farmers, are intensifying the dry winds that cascade down the steep coastal range and deepen the effects of drought.

A shift in weather patterns has affected the morning cloud cover known as the marine layer, pushing the foggy early-summer “June gloom” into a late-summer “Fog-gust.” The marine layer also has thinned out, declining by as much as 50 percent since 1970, according to A. Park Williams, a research professor at Columbia University’s Lamont-Doherty Earth Observatory.

That results in less coastal moisture, and more risk of fire.

Amber Stevens, right, a student at UCSB, plays with friends in Isla Vista. The cliffs below the apartments used as student housing are disappearing as a rising ocean slowly erodes them.

Some of the cliffs overlooking the Santa Barbara Channel have been reinforced with netting and cement columns.

In neighboring Ventura County, the fastest warming in the Lower 48 states, high tides and rough seas are eating away at this seaside parking lot.

A quarter of California's 40 million residents now live in high-risk fire zones.

For the past three autumns, tens of thousands of people have packed up family photos, home deeds and marriage licenses to evacuate in fearful, fire-driven migrations, from the Sierra Nevada to San Diego. More than 6,000 residents were forced from their homes here Nov. 25, when the Cave Fire flared up in the Santa Ynez Mountains, burning thousands of acres of chaparral-covered hillside.

Wildfires have long been a fact of life here, but today's fires are simply more intense. The three most severe in state history — measured by acreage burned, homes destroyed and lives lost — have happened in the past two years. In the coastal counties running from Santa Barbara to San Diego, four of the five worst fire seasons of the past half century have burned in the last two decades.

State Sen. Henry Stern (D-Canoga Park), whose home burned in the 2018 Woolsey Fire in Malibu, doesn't know anymore what to tell his constituents north of Los Angeles, who have experienced several fires and electricity outages this fall.

"I feel like I am failing them," he said.

Seeking to reduce fire risk and financial liability, utilities have begun intentionally cutting off power. This year alone, nearly 3 million Californians were left in the dark for days. State officials say generator sales have soared 1,400 percent.

"What we have seen is a complete lack of preparedness," said Trent Robbins, chief executive of Santa Barbara-based Global Power Supply, where customer calls for

generator sales and rentals quadrupled in October. “This is like climate change writ small — you know it’s coming, but you are not preparing.”

What has surprised those who live, work and study the climate in Santa Barbara is how precipitously the warming is happening. A recent study of the Santa Barbara-area climate projected that “the number of extremely hot days will likely double by 2050.”

“It’s been hard to connect the dots,” said Santa Barbara County Supervisor Joan Hartmann, whose district includes parts of the Santa Ynez Valley, where she has had a home for two decades. Hartmann said she had never been forced to evacuate by fire until last year. She has since had to leave home twice.

Now she and her neighbors meet regularly, often in living rooms over a glass of the valley’s famous pinot noir, to discuss the confounding climate.

“We’re asking each other, ‘Who has the horses if something happens? Who is frail and needs extra help?’ ” she said. “This is also about social resilience now, about neighborhoods looking for ways to protect themselves.”

Rapid warming and extreme weather have affected the coastal sweep from Santa Barbara to San Diego counties. The 2018 Woolsey Fire in Malibu killed three people and torched over 1,600 buildings. (Kyle Grillot for The Washington Post)

‘Global weirding’

On July 6, 2018, a huge high-pressure system over Colorado helped spin a mass of hot air into Southern California.

By 11 a.m., temperatures reached 90 degrees Fahrenheit, so Guner Tautrim, whose family has farmed Orella Ranch for seven generations, worked with his father to spray down their pigs, chickens and horses with water before taking refuge inside.

“The crazy thing happened around 3 p.m., when the temperature just started going up and up,” Tautrim said.

It spiked to 115 degrees Fahrenheit, then, nearly as abruptly, cooled down after sunset. Such an hours-long super spike had happened only once before in Santa Barbara — 149 years ago.

“I call what’s happening here ‘global weirding,’ ” said Tautrim, whose farm was deeded through a Spanish land grant more than two centuries ago.

The damage was severe: Dozens of Tautrim’s animals died in the heat, and his neighbors saw entire avocado harvests fail. Some scorched orchards have yet to recover, and the hills behind his redwood house are parched to the color of desert sand.

Those losses add up.

Last year, Santa Barbara farmers and ranchers took in $1.5 billion in revenue, a nearly 5 percent decline from the previous year, according to an annual report that began with an introduction titled: “2018 — A year of extreme weather and events.”

The unpredictability has prompted experimentation along the windblown Gaviota Coast, a 76-mile comma of beach and orchards that make up the largest stretch of undeveloped land in Southern California.

Set between the mountains and the sea, Eric Hvolboll’s La Paloma Ranch once filled with water during the rainy season, forming fishing ponds used by the Chumash tribes hundreds of years ago.

Now it is dry.

The ranch’s 746 acres of slope and ravine, cropland and pasture have shifted thanks to a combination of drought and technology. The primary crop since 1969 has been avocado, profitable but water intensive in a place with very little water left. It was the first crop on the farm to need irrigation.

Now crawling up the hillside are neat rows of agave, the spiky plant that in Mexico produces tequila. It is among the least thirsty of crops and, in some ways, takes La Paloma Ranch back to the pre-irrigation days of Hvolboll’s grandparents, who relied on the rain alone to grow garbanzo beans, walnuts and lima beans.

La Paloma Ranch manager John Kleinwachter plants tropical

crops that are more resilient to the county's drier, warmer climate.

Agave is new to coastal Southern California, and the owners of La

Paloma Ranch are not sure yet
whether it’s commercially viable.

A small Ventura distillery has started selling liquor made from La Paloma's agave, the latest craft offering added to Southern California's homegrown wine and beer.

"The question I had to ask was, 'Is there a way we can make money and not use water?' " said Hvolboll, a lawyer by training. "We still don't know if we can make money doing this."

A small Ventura distillery turns the agave into craft tequila — though it can't be labeled tequila because it isn't from that region of Mexico. It is selling in small batches, and Hvolboll said he hopes to switch out some of his avocados for the durable plants.

"Our working assumption is that we are going to have less and less water," said Hvolboll, 64. "Maybe not tomorrow, maybe not in my life. But we have to look at all options around that assumption."

Four years ago, in the midst of the state's historic drought, Jay Ruskey winnowed his avocado orchard. At the time, the reservoir in the valley where much of Santa Barbara's water originates was at just 6 percent of capacity.

“I don’t think people had any idea how close we came to simply running out of water,” Ruskey said.

He too, is turning to more tropical crops: finger limes native to Australia, dragon fruit, passion fruit, and now, coffee, which he sells under the brand Frinj. The coffee trees run downhill between his avocado trees, benefiting from the shade.

“These last 10 years have been very different from the first 20 years,” said Ruskey, 47, who has owned his farm since 1990. “I could step aside, and someone would replace me. Or I can change.”

Jay Ruskey has winnowed his avocado orchard and turned to planting more exotic fruits on his farm, including the dragon fruit shown here.

Ruskey is a local pioneer in growing coffee in Southern California. He markets his coffee under the Frinj brand and has clients with whom he consults as far south as San Diego.

Avocado is a water-intensive crop. A drought four years ago persuaded Ruskey to diversify his plants.

‘No teeth in these plans’

If there is a God-given civic right in which Santa Barbarans believe, it is bountiful and convenient free public parking.

Studies have found that there is no greater predictor of the number of cars on the road than the availability of free parking. And in Santa Barbara County, the biggest contributor to air pollution and greenhouse gas emissions is the car.

Environmentalists are lobbying to put an end to it and to even replace parking lots on prime downtown real estate with housing. But that campaign has so far failed to budge the city council on an issue the business community says is key to profitability.

“Parking is the third rail of Santa Barbara politics,” said Michael Chiacos, a native of the city who works with the nonprofit Community Environmental Council.

Sacrifices in service of environmental goals have been tough to come by in Santa Barbara, local environmentalists say — evidence, perhaps, of the county’s conflicted history.

Huge oil deposits make the region one of California’s primary producers and shape its politics, despite a seminal environmental disaster in January 1969. Then, a Unocal rig blowout cracked the sea floor, spilling 3 million barrels of oil, the third-largest spill in U.S. history. To this day, beachgoers find tar on their feet from the still-seeping oil.

State forestry conservation crews, made up of inmates pictured here, clean up Santa Barbara's beaches on Feb. 6, 1969, after a gigantic oil spill. The accident inspired the Earth Day movement. (Wally Fong/AP)

The disaster gave rise to Earth Day, and much of the environmental expertise and activism that grew up around the movement is still based here. But Santa Barbara is often accused of caring more about how it looks than how it lives.

Several government-sanctioned architectural review boards make sure the city's breezy, Mediterranean aesthetic remains intact, supported by many staff members. But until recently, only one person was directly responsible for moving the city toward renewable energy sources.

The county conducts a full inventory of its greenhouse gas emissions only once every three years. And its Climate Action Plan imposes no mandatory regulations on businesses or individuals.

"There are no teeth in these plans. The rules are just words on paper," said Tomás Morales Rebecchi, the senior Central Coast organizer for the nonprofit Food & Water

Watch. “No one is there to enforce it.”

Williams, the county supervisor, once used the term “environmental poseurs” to describe the gap between Santa Barbara’s talk on the environment and its actions.

“We’re always willing to make changes that cost nothing, but never willing to take steps that really change things and that will cost something,” said Edward France, the former executive director of the Santa Barbara Bicycle Coalition.

There has been some progress. The city council recently voted to create a program that allows utility customers to select the source of their electricity. Residents will automatically receive 100 percent renewable power from desert solar panels, which can be more expensive, unless they choose not to participate.

But the oil industry still has clout. In 2014, it spent big to defeat a county referendum that would have banned “high-intensive” drilling operations such as fracking and steam injection. And county officials are actively considering a proposal to allow a major drilling expansion in the north, a move environmentalists say would directly contradict their climate goals.

“We’ve got this wave of new oil projects being proposed, but we also have a climate action plan,” said Linda Krop, chief counsel of the Environmental Defense Center, a local organization that emerged after the 1969 oil spill. “You can’t responsibly approve one, and claim to be serious about the other.”

Drill horses line Route 33 in Ventura County. The region's push for a greener economy has at times been complicated by the big-money legacy of oil, which is bountiful along the coast and offshore.

Fire in the valley

On a warm late-September evening, several dozen farmers and ranchers gathered inside the stuffy gymnasium of Los Olivos Elementary School to learn about one of the more peculiar aspects of living in a place that is warming faster than most anywhere in the country.

Eric Daniels, regional policy and external affairs director for Pacific Gas and Electric, the state's largest utility, had been invited to explain a decision to begin cutting power to their homes in the hope of preventing wildfires caused by downed lines.

"My office has been inundated with questions about this," Hartmann, the county supervisor, told the audience. "What is frustrating right now is that we need to protect our residents, but we do not have a say over these shutdowns."

Daniels said PG&E would act only in times of extreme risk and would try to give people two-days' notice before turning off electricity to their water pumps, refrigerated warehouses and homes.

"This will give you and your loved ones time to get your emergency kits ready," he said.

Larry Saarloos, owner of Saarloos and Sons winery, spent hundreds of thousands of dollars on fire-prevention measures around his vineyard, only to find after a power outage that it didn't work.

In the audience sat Larry Saarloos, a stout vintner who has spent more than $100,000 building his own Maginot Line against wildfire. Over the past three years, Saarloos installed two fire hydrants, new alarms and an advanced system of sprinklers and cisterns on his 100-acre ranch, a mix of horses, cattle and grapes that his family turns into well-regarded syrah and cabernet sauvignon.

The price seemed a small one to pay as fall approached. One dry, breezy day in early September, two fires sparked nearby, their pillars of smoke bracketing his home. He

turned to his wife, Linda, and assured her that all would be fine when he turned on the sprinklers to wet the place down.

But when he flipped the switch, nothing happened. The power had been cut by an equipment failure.

Mark Mesesan, a PG&E spokesman, said smoke and airborne debris had caused an electrical fault. “This is an area where we’re working to improve,” he said via email.

To Saarloos, the experience was an unpleasant introduction to a confusing new world.

“Everything I just told you I did, the steps I took, meant absolutely nothing to the protection of my home when the fire came,” he said. “I might as well not have spent any money at all.”

Those who followed had questions, unanswerable now. Would PG&E, now bankrupt with billions of dollars in fire-related liability costs, reimburse them for lost produce? Would the state offer tax breaks for generator purchases? Or would they simply be left in the dark when the fires came?

“We’ve got a lot of folks working on those things right now,” said Matthew Pontes, the assistant county executive officer of Santa Barbara. “I hope we have some better answers for you soon.”

The Getty Fire in Los Angeles burned a dozen homes in late October, ahead of Halloween, this one on a ridgeline near Brentwood, Calif.

Chris Mooney contributed to this story.

METHODOLOGY

To analyze warming temperatures in the United States, The Washington Post used the National Oceanic and Atmospheric Administration's Climate Divisional Database (nClimDiv), which provides monthly temperature data at the national, state and county level between 1895 and 2018 for the Lower 48 states. NOAA does not provide this data for Hawaii, and its data for Alaska begins in 1925.

We calculated annual mean temperature trends in each state and county in the Lower 48 states using linear regression — analyzing both annual average temperatures and temperatures for the three-month winter season (December, January and February). While not the only approach for analyzing temperature changes over time, this is a widely used method.

Annual temperature averages in the interactive county feature are displayed as departures from the 1895-2018 average temperature for each county. These

departures from the average are referred to as "temperature anomalies" by climate scientists.

To make the maps, we applied the same linear regression method for annual average temperatures to NOAA's Gridded 5km GHCN-Daily Temperature and Precipitation Dataset (nClimGrid), which is the basis for nClimDiv. For mapping purposes, the resolution of the data was increased using bilinear interpolation.

The nClimDiv and nClimGrid datasets were accessed June 10 and July 22 respectively.

Fire perimeters for 2019 from USGS GeoMAC Wildland Fire Support were accessed Nov. 15. Fire perimeters for past years are from the California Department of Forestry and Fire Protection.

Credits

Project by Trish Wilson. Editing by Lori Montgomery. Design and development by Madison Walls and Irfan Uraizee. Graphics editing by Monica Ulmanu. Photo editing by Olivier Laurent. Copy editing by Whitney Juckno.

Scott Wilson
Scott Wilson is a senior national correspondent for The Washington Post, covering California and the West. He has previously served as The Post's national editor, chief White House correspondent, deputy assistant managing editor for foreign news, and as a correspondent in Latin America and in the Middle East.

Michael Robinson Chavez
Michael Robinson Chavez, a staff photographer, recently won a Robert F. Kennedy Award for his coverage of social problems created by the drug trade plaguing Mexico. In 2018 he covered the rise of autocracy in Eastern Europe.

John Muyskens
John Muyskens is a graphics editor at the Washington Post specializing in data reporting.