'Stay or go' policy puts Australian families on front lines of firefighting
Residets in the path of bushfires are told to evacuate early or stay and fight. A family that chose to stick one out endured a frightening test of endurance and determination.
By Julie Cart, Los Angeles Times Staff Writer, Last of five parts
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ANAKIE, AUSTRALIA -- It was brutally hot, 108 degrees, and the wind was howling. Bushfires were raging in the hills, making their way inexorably toward the Baker farmstead at the foot of the Brisbane Ranges.

John and Carlene Baker had moved here to get away from the hurly-burly of the city. They lived with their two children and a cast of orphaned animals on a 60-acre spread they called Foxford.

Now, all of it was threatened. Embers were falling around the house. The animals were growing restless. The Baker property sits deep in a box canyon, a mile from the main road. The couple knew there was little or no chance firefighters would reach them.

Southern Californians might respond to such a predicament by packing the car and evacuating. The thought never entered the Bakers' minds. Instead, they did what they had been trained to do: stay and fight.

Fire is a pervasive danger in Australia, just as in much of the American West. But Australians cope with the threat in a manner difficult to envision in the U.S.

Americans expect firefighters to protect their lives and property. Australians in rural communities view that as their own responsibility.

U.S. authorities are quick to order mass evacuations during wildfires; they prefer to get civilians out of the way so professionals can douse the flames. Australian officials are more likely to hand homeowners shovels and put them to work.

People here live by the principle of "stay or go" during fire season. Residents who can't or won't battle an advancing fire are advised to get out early. Those who stay are expected to defend their homes. It's a policy driven by pragmatism: There simply aren't enough firefighters or firetrucks to protect far-flung rural homesteads.

What's more, researchers here have found that people and houses are more likely to survive a bushfire if they stay together. The reason: Wind-borne embers and the spot fires they cause pose the greatest threat to homes. Residents properly trained and equipped can easily extinguish these small fires.

Fleeing at the last minute is much more dangerous than hunkering down and fighting. Roads are often choked with smoke or blocked by downed trees and utility poles. Late, panicky evacuations account for most wildfire deaths, Australian authorities have found.

The "stay or go" policy, adopted state by state beginning in the mid-1990s, has sharply reduced losses of life and property in wildfires, statistics show. In 1983, a year of widespread conflagrations, 60 Australians lost their lives in bushfires, not including firefighters, researcher Katharine Haynes reported. In the equally severe fire season of 2003, bushfires caused just six deaths.

Only a handful of Australians have died in their homes during wildfires in the last 10 years, and none of them were actively defending their properties, according to researchers at the Bushfire Cooperative Research Center in Melbourne.

There has also been a significant drop in fatalities among people who evacuate during bushfires, evidently because more of them are heeding advice to leave early, researchers say.

The "stay or go" approach so far has found little acceptance in the United States. But as wildfires become more severe and costlier to fight, some U.S. officials say the Australian model deserves a serious look.

"We need to push this concept and push it hard," said Bodie Shaw, wildland fire director for the U.S. Bureau
of Indian Affairs, which fights fires on reservations and other public lands. "The onus and responsibility need to shift to you as a property owner."

Shaw is leading a group of federal, state and local fire officials examining how the Australian policy would work in this country. They will submit recommendations in the fall to the National Wildfire Coordinating Group, a Cabinet-level committee that reports to the president.

Rancho Santa Fe in northern San Diego County is one of the few communities outside Australia to adopt elements of "stay or go." The local fire district urges homeowners to follow strict fire-safety standards for buildings and landscaping and stay in their homes during wildfires rather than evacuate in dangerous conditions. The policy stops short of training residents to actively defend their properties -- that's still left to firefighters. Subdivisions totaling 5,000 homes are participating in the voluntary program.

In Australia, sheltering at home does not mean simply waiting the fire out. It means confronting the menace with hose, mop and shovel.

"Let’s be honest: It is scary," said John Valcich, captain of a volunteer fire brigade in the rural community of Mansfield. "We’re not telling you that you have to stay. But [if you leave] you will lose your house. And don’t blame anyone. What’s it like to stay? It’s like standing at the back of a jet plane when it’s revving up. I try to tell people what to expect. But it comes as a hell of a shock when it hits."

Living in a tinderbox

Australians, like Southern Californians, live in one of the world’s most combustible landscapes. Their native tree, the eucalyptus, litters the ground with kindling. Its oil-drenched leaves and bark ignite easily.

As in the Western U.S., Australians in growing numbers have been moving from cities and suburbs into picturesque but fire-prone scrublands. Making matters worse, the fire season has been starting earlier and lasting longer, a phenomenon attributed to prolonged drought and climate change.

The Bakers armed themselves against the danger. They stocked up on fire-resistant clothing. They bought a small pumper truck with regulation fire hoses and a generator to run water pumps. They set aside a 6,000-gallon water tank for fighting fires. They learned to clear brush regularly to create defensible space around the house. The entire family joined the volunteer fire brigade and received training through the state of Victoria’s rural fire service.

Their preparations were put to the test in early 2006, when bushfires marched across the region. The Bakers anxiously tracked the plumes of smoke. By Sunday, Jan. 22, they knew they were in for it. John’s parents took the family’s three horses to safety on their property near Melbourne. The children, Isaac, then 15, and Molly, 13, were given the option of leaving with them. They chose to stay. After securing the horses, the grandparents returned to help defend Foxford.

John moved tractors, two water trailers and other vehicles close to the house. Carlene, who takes in orphaned animals, made sure her charges were also within the family’s defensive perimeter, the rough circle of land they were determined to protect.

She shooed the hen and her newly hatched chicks into the house, where they shared a bathroom with two dogs. The cat, Midnight, spent the firestorm locked in a bedroom. An alpaca, five cows and 22 sheep remained in the barn, which Carlene declared must be defended at all costs.

Everyone was given a job. John and his father, Rodney, 69, repeatedly doused the house and outbuildings with water. Carlene and Isaac helped.

Inside, Molly and her grandmother, Pam, 66, filled the bathtub and sinks with water and soaked mops, towels and washcloths. They stuffed the towels under doors to keep out embers and smoke. They gave the washcloths to those outside to cover their mouths and wash ash and grime from their faces.

At 2 p.m., the Bakers got a call from neighbor Vaughan Stephens, a professional firefighter. Get ready, he told
them. The fire is headed your way.

Embers the size of golf balls began to rain down. Each was a bomb that exploded on landing, "Within a minute, the flames were climbing up trees," Carlene said. "We were completely surrounded by fire."

For the next few hours, each family member protected an assigned area, extinguishing small fires with a hose or mop. Molly stuffed aluminum foil in the cracks between the stacked railroad ties that formed the front wall of the house. Carlene moved the pig from his frontyard pen onto the veranda to protect the animal from swirling embers.

By early evening, the ember attack had subsided. The house, barn and other buildings had survived -- so far. In the lull, Carlene noticed wildlife coming in from the bush. Wallabies and kangaroos crawled under the cars and farm equipment. Possums joined the pig on the veranda. The animals were taking shelter. The fire front was about to arrive.

'A continent of fire'

Like those in Southern California, Australian bushfires are driven by wind. Hot, arid blasts out of the northwest rake the nation's desert interior, hurling toward Victoria's eucalyptus forests and grasslands.

"Here reside the fires that give Australia its special notoriety, not merely as a continent of fire but as a place of vicious, unquenchable conflagrations," American fire historian Stephen J. Pyne has written. "In the fire flume lurk the great, the irresistible fires of Australia."

One of the worst blazes in the country's recorded history occurred in February 1983. One hundred fires started on what came to be known as Ash Wednesday. Eighty-three people were killed, 2,600 injured and more than 2,500 homes destroyed in Victoria and South Australia.

The tragedy shook the nation and prompted governmental and academic inquiries. One study found that occupied houses survived at twice the rate of those left unattended. If the occupants were able-bodied, the survival rate for houses was 90%.

Teams of researchers interviewed survivors and compiled their recollections. A major finding: Most of those killed by the fires were in vehicles or out in the open. In one instance, a group overtaken on the road by a wall of flames huddled in their car as the windows exploded and the seats began to melt. One woman screamed that she couldn't stand it any longer, then climbed out and ran for it. Her body was later found nearby, her rubber thongs fused to the blacktop.

Similar tragedies have occurred in Southern California. Nine people died fleeing the massive Cedar fire in San Diego County in October 2003.

In Australia, Ash Wednesday prompted a rethinking of fire preparedness. Federal researchers pored over more than 100 years of data recorded by rural fire brigades. Their findings dispelled a host of calcified myths, notably the belief that bushfires incinerated homes in a wall of flames. In fact, scientists concluded, more than 90% of the houses lost were never exposed to direct flames or radiant heat. Rather, structures typically were ignited by embers.

"That all instantly clicked with the fundamental observation that when people are around these structures, there's a massive improvement in the statistical survivability of the house," said fire researcher Justin Leonard. "It's small, relatively insignificant ignitions that, in isolation, are relatively simple to put out. But you just have to be there at the time."

Australia already had one of the world's largest volunteer firefighting forces, but more people would need to be trained. Authorities developed community seminars, brochures and DVDs explaining how to maintain defensible space and prepare for an ember attack and then the fire.

A major challenge was persuading homeowners to overcome the primal impulse to flee in the face of fire.
"Where we've suffered the greatest loss of life is when people stay, then at the last minute go hopping in the car and ripping down the road, smashing into a tree at 100 miles an hour," said Jim Darling, a volunteer firefighter who raises sheep and cattle in Strath Creek, 50 miles north of Melbourne.

"Panic is amazing. Put a lot of smoke on it and a dose of panic, and you've got people who drive a road every day of their lives losing their way and driving right off it."

'It sounded like a train'

At 7 p.m., Carlene Baker saw smoke flowing over the hills like lava. It was the leading edge of the fire.

At this stage in a bushfire, homeowners are trained to take shelter in their homes while the front passes over, which usually happens quickly. The couple knew that wouldn't be the case this time.

High winds were whipping the fire around the bowl-shaped canyon. This front would not rush past; it would scour the landscape until there was nothing left to burn. The children and the grandparents were indoors, but Carlene and John would have to stay outside and fight.

A spot fire started behind the house. They rushed toward it before stopping short. They would have to drag hoses across a long stretch of burning ground, and dared not risk it.

A huge gum tree caught fire and exploded, then fell with a crash. A line of fire burst out of the debris and raced up the lawn, toward the house. Carlene and John made a stand, dousing the blaze with their fire hoses.

For four hours, they were in constant motion, dragging hoses from one fire to another. "Every direction was burning," Carlene said. "You felt like you were melting."

The wind picked up a wooden aviary, fluttering with colorful, fat budgerigars, and dashed it against the ground. Towering eucalyptus trees erupted in showers of sparks.

When John and Carlene had a chance, they banged on the front door. Molly would hand them wet washcloths and drinks, then snap the door shut. The heat was intense. So was the noise. "It sounded like a train going through," Carlene said. When she needed to tell her husband something, she had to grab him by the shoulder to get his attention.

John had been racing around the compound putting out fires for hours. Near exhaustion, he told Carlene they should concentrate on saving the house and let everything else go. Carlene shouted: "No! We're saving the animals."

The couple laid down a misting rain in the barn to quell embers and smoke. Rosie, the Hereford cow, was terrified. "All I could see were the whites of her eyes," Carlene said. "I stayed with her and patted her for a while."

By 11 p.m., the front had moved on. The house had withstood the siege. Carlene and John kept an eye on embers that were glittering everywhere, but they knew they had taken the worst of it. They went inside to call neighbors and check in. They couldn't: The phone line had melted.

The family members slept in shifts and patrolled the house and yard in pairs. Carlene and Molly, too wired to sleep, took the first shift. Sitting on the front veranda with the pig and possums, mother and daughter were treated to a spectacular show.

"In the pitch black, you could see the red glow everywhere," Carlene said. "After all the roar of the fire, now there was no sound. It felt like you were the last people in the world."

About 2 a.m., two dots of light appeared in the long driveway, distant and improbable. A truck skidded to a halt in the frontyard, and a man jumped out. It was their neighbor, Vaughan Stephens. He was crying.

He had come to check on the family and had found the front gates to the property lying charred on the...
ground. He'd continued up the driveway, telling himself: "Someone has to identify the bodies." To his relief, they were all safe.

No regrets

Later that morning, they opened the front doors and the dogs bounded out of the house. Midnight the cat burned his paw digging in the still-hot ground. It was six months before he stepped outside again.

John and his parents went to work. Carlene and the children fashioned a makeshift corral for the animals; all the fences had burned. Neighbors and friends began to pour in. Carlene got a ride to a store to buy water and food and use the phone. On the way, she got her first good look at what the fire had done to Foxford's rolling green hills.

"It was total devastation," she said. "There were dead kangaroos everywhere, dead possums everywhere. I saw a lot of lumps that I couldn't tell what they were. Turned out to be koalas."

Still, the family counted itself lucky. Some neighbors and friends had lost everything.

Carlene kept reliving the choice she, John and the children had made to stay and fight. Had she known what it would be like, she might have evacuated. But having lived through the ordeal, Carlene said, she would do it again.

"We built that house ourselves. This is our home," she said. "We'll defend it again."
The writing on the wall
* Drought, fire, killer heat and suicides -- scientists say climate change fears have become reality in Australia.

By Julie Cart

THE MURRAY-DARLING BASIN, AUSTRALIA -- Frank Eddy pulled off his dusty boots and slid into a chair, taking his place at the dining room table where most of the critical family issues are hashed out.

Spreading hands as dry and cracked as the orchards he tends, the stout man his mates call Tank explained what damage a decade of drought has done.

"Suicide is high. Depression is huge. Families are breaking up. It's devastation," he said, shaking his head.

"I've got a neighbor in terrible trouble. Found him in the paddock, sitting in his [truck], crying his eyes out. Grown men -- big, strong grown men. We're holding on by the skin of our teeth. It's desperate times."

A result of climate change?

"You'd have to have your head in the bloody sand to think otherwise," Eddy said.

They call Australia the Lucky Country, with good reason. Generations of hardy castoffs tamed the world's driest inhabited continent, created a robust economy and cultivated an image of irresistibly resilient people who can't be held down. Australia exports itself as a place of captivating landscapes, brilliant sunshine, glittering beaches and an enviable lifestyle.

Look again. Climate scientists say Australia -- beset by prolonged drought and deadly bush fires in the south, monsoon flooding and mosquito-borne fevers in the north, widespread wildlife decline, economic collapse in agriculture and killer heat waves -- epitomizes the 'accelerated climate crisis' that global warming models have forecast.

With few skeptics among them, Australians appear to be coming to an awakening: Adapt to a rapidly shifting climate, and soon. Scientists here warn that the experience of this island continent is an early cautionary tale for the rest of the world.

"Australia is the harbinger of change," said paleontologist Tim Flannery, Australia's most vocal climate change prophet. "The problems for us are going to be greater. The cost to Australia from climate change is going to be greater than for any developed country. We are already starting to see it. It's tearing apart the life-support system that gives us this world."

Deadly fires

Many here believe Australia already has a death toll directly connected to climate change: the 173 people who died in February during the nation's worst-ever wildfires, and 200 more who died from heat the week before. A three-person royal commission has convened to decide, among other things, whether global warming contributed to massive bush fires that destroyed entire towns and killed a quarter of Victoria state's koalas, kangaroos, birds and other wildlife.

The commission's proceedings mark the first time anywhere that climate change could be put on trial. And it will take place in a nation that still gets 80% of its energy from burning coal, the globe's largest single source of greenhouse gases.

The commission's findings aren't due until August, but veteran firefighters, scientists and residents believe the case has already been made. Even before the flames, 200 Melbourne residents died in a heat wave that buckled the steel skeleton on a newly constructed 400-foot Ferris wheel and warped train tracks like spaghetti. Cities experienced four days of temperatures at 110 degrees or higher with little humidity, and
100-mph winds. In areas where fires hit, temperatures reached 120.

On the hottest day, more than 4,000 gray-headed flying foxes dropped dead out of trees in one Melbourne park.

"Something is happening in Australia," firefighter Dan Condon of the Melbourne Metropolitan Fire Brigade wrote in an open letter. "Global warming is no longer some future event that we don't have to worry about for decades. What we have seen in the past two weeks moves Australia's exposure to global warming to emergency status."

The possibility that a high-profile royal commission may find a nexus between climate change and the loss of human life is significant for many scientists here.

"That will be an important moment in its own right," said Chris Cocklin, a climate change researcher at James Cook University in Townsville, in Queensland state, and lead author on the latest report from the Intergovernmental Panel on Climate Change.

"It may mean that climate change will be brought to the fore in a way that has never happened before."

Dust Bowl scenes

Australia's climate change predicament is on depressing display in the Murray-Darling Basin, where the country's three largest rivers converge, and where Eddy runs a shrinking 100-acre orchard.

The rivers -- the Murray, Darling and Murrumbidgee -- flow from the western slopes of the Great Dividing Range and nourish the valleys of Australia's fruit and grain basket, as well as a diverse system of wetlands, grasslands and eucalyptus forests.

Like scenes from a modern Dust Bowl, mile after mile of desiccated fields lie fallow, rows of shriveled trees that once bore peaches and pears are now abandoned orchards, and small businesses are shuttered, fronted by for-sale signs. The dingy brown of the landscape rearranges in a cloud of dust with every hot wind that blows.

Farmers who once grew 60% of the nation's produce are walking off their land or selling their water rights to the state and federal government. With rainfall in the region at lower than 50% of average for more than a decade, Australia is witnessing the collapse of its agricultural sector and the nation's ability to feed itself.

In rural Victoria, one rancher or farmer a week takes his own life. Public health officials say hanging is the preferred method.

"Fourteen dairy farmers in the valley have committed suicide in the last five years," Eddy said matter-of-factly, staring at his hands at his long, wooden dining room table. "Hangings, they are common but they are not made public. It's really depressing, it's really tough going.

"Fruit growers are abandoning their orchards. It's their life's work, and it's gone to dust. They are at their wits' end. The small growers haven't got the money to replant. Haven't got the time to wait five years for a return. The machinery they have is not salable. They have thrown their arms up and walked away. They are broken people."

Pulling up trees

Those who remain continue bulldozing apple and peach trees too stressed to produce marketable fruit. Each fall, orchard owners burn the trees in a massive bonfire, forlornly "toasting" their failed crops with cans of beer. More than 20% of the fruit trees in the Goulburn Valley have been pulled up in recent years. Few new trees take their place.

Local dairy farmers live a similar definition of unsustainability, concluding they can make more money selling their water to cities than they can selling milk.
"That’s what got us through last year," said Di Davies, Eddy’s neighbor. "We parked our cows and sold our water."

Santo Varapodio, 73, is the patriarch of a family that runs one of the largest fruit operations around the nearby agricultural center of Shepparton. The area’s annual rainfall used to be 19 to 21 inches a year.

"Now we’re lucky if we get 6 to 7 inches," Varapodio said, displaying the stunted pears picked from under-watered trees. He said this summer’s heat wave "cooked" his fruit. "When we bring the pears in, about 15% will have burn on them," Varapodio said. "The apples will have anything up to 50% sunburn on them."

Rainfall patterns have been frustratingly uncooperative. Gentle winter showers that replenished groundwater have been replaced by torrential summer onslaughts that turn the fertile topsoil into a slough.

Most of the country is in the grip of the worst drought in more than a century. Every capital in Australia’s eight states and territories is operating under considerable water restrictions. In urban areas, "bucketing" has become a common practice -- placing pails in showers and using the gray water on lawns or gardens. In some cities, such as Brisbane, residents drink recycled water, a process nicknamed "toilet to tap."

In rural areas, the lucky tap their own wells, provided they still function. Others survive on rainwater or what they can scrounge or buy.

Meanwhile, the tropical north’s rainy season, known as the Big Wet, is longer and wetter than ever. Warming tropical waters in the Coral Sea and the Gulf of Carpentaria spawn ever more powerful cyclones, while rainfall and heat records are broken every year.

The coastal city of Darwin, in the Northern Territory, swelters through 20 to 30 days of temperatures above 95 degrees, with high tropical humidity. Government scientists project that by 2070, Darwin will experience such conditions as many as 300 days a year.

Communities on the Cape York Peninsula accustomed to being flooded for days are commonly cut off for weeks. Throughout February, the Queensland government airdropped supplies to citizens, who had to wait to reemerge when the water recedes in the Southern Hemisphere’s autumn, in late March or early April. In the meantime, in-ground burials are on hold.

Climate change researcher Cocklin lives in the far north, where the new regime of intensified monsoons scarcely gives Queenslanders a break.

"You might get punched and get up again," he said. "The second time it's harder to get up. The third time, you can't be bothered. How many times can you get punched?"

Australians in the south would see water as heaven-sent; in the north, it's a curse. In March, a young girl playing by a rain-swollen river was carried off by a crocodile, the second child lost to crocs in a month.

The region is beset with twin epidemics of malaria and a dangerous form of hemorrhagic dengue fever, from mosquitoes that breed in the standing water. Such diseases are expected to become more common in the tropics with climate change.

Reef is withering

Not far from where Cocklin lives, the north's two largest tourism draws, the Great Barrier Reef and the Tropical Rainforest Reserve, are withering under climate extremes. Higher ocean temperatures are bleaching expanses of coral and affecting fish and plant species. A report issued last year by the Intergovernmental Panel on Climate Change projected that the Great Barrier Reef will be “functionally extinct” by 2050.

Cocklin was just back from giving a presentation at a climate change conference in Europe, showing the degradation of the reef as well as photographs of the bush fires and floods. "The audience was a little bit in awe of what's going on in Australia," he said.

Inland, tropical forests are retreating up mountainsides as species of towering trees die off at lower altitudes
and reestablish themselves in cooler climes. Rare and unique animals are on the move, competing for scant space atop Australia's modest topography. In most areas, the vertical distance from the tree line to a mountain's peak is less than a quarter-mile.

"If you are at the top of the mountain, it will only take a couple of degrees to push you off the top," said Stephen Williams, director of the Center for Tropical Biodiversity and Climate Change in Townsville. Scientists paint a bleak picture of wildlife competing for space on peaks in the country's alpine region. Williams and other biologists predict as much as 50% animal extinction in the region by the end of the century.

Chief among the candidates for extinction is the rare white lemuroid ringtail possum, a singular species that Flannery, the paleontologist, describes as "our panda." The pale creatures live high in trees in the 4,000 square miles of moist forest in northeast Queensland. They can't tolerate, even for hours, temperatures above 86 degrees. Williams' research found that the possum was gone in one of the animal's two historical ranges, and in the other it "has declined dramatically, to the point where you can barely detect it."

Williams said that when he shares his research illustrating the degree to which the continent's biodiversity is at risk, "people's jaws drop."

Scientists are frustrated that such dramatic anecdotal and empirical evidence hasn't sparked equally dramatic action from Australia's government. They suspect the inaction can be partly explained by examining the nation's relationship with coal. Australia is the world's largest exporter of coal and relies on it for 80% of its electricity. That helps make Australia and its 21 million people the world's highest per-capita producers of greenhouse gases in the industrialized world.

Climate change researcher Cocklin, who is deputy vice chancellor at James Cook University, said the power of the coal companies and the massive receipts they bring in render the industry politically untouchable.

"The nature of our energy profile is one where coal features significantly," he said. "There's no denying it's a massive problem. I don't think in the public-political arena it is being challenged with the tenacity that you would want. No Labor [Party] government is going to challenge that."

Prime Minister Kevin Rudd says climate change is high on his agenda, but many here are disappointed by his pledge to cut overall greenhouse gas emissions by only 5% by 2020.

Scientists and policymakers now agree that even drastic cuts won't halt climate changes already underway. In response, some Australians are considering whether outback settlements should be abandoned.

"We are already very flat and very dry as a continent," Flannery said. "There is just this little margin that is inhabitable. We don't have a lot of options."

Most Australians live on the coast, where they are vulnerable to flooding because of rising sea levels, projected to increase by 6 1/2 feet this century.

"Some places are pretty close to being bloody unlivable anymore," Cocklin said.

"When you start talking about places where 45 degrees [113 Fahrenheit] is commonplace, that raises the question of 'Can you really live in that?' " 