

WILDFIRES

LATINO COMMUNITIES & THE PATH TO RESILIENCE

A HISPANIC ACCESS FOUNDATION WHITEPAPER ON CLIMATE
CHANGE, WILDFIRE RISK, AND COMMUNITY LEADERSHIP



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EXECUTIVE SUMMARY

Wildfires are no longer isolated, seasonal events; they are a **national crisis** intensified by **climate change**, land mismanagement, and systemic inequities. **Latino communities** are on the frontlines: living and working in high-risk areas, disproportionately exposed to smoke and toxic debris, and often excluded from disaster planning and recovery. Without **urgent action**, wildfires will continue to deepen disparities in health, housing, and economic stability for millions of Latino families.

THE PROBLEM

- **Widespread Impact:** Wildfires now affect more than 115 million people in the U.S., (Headwaters Economics, 2024).
- **Disproportionate Risk:** Latino communities face higher risks due to geography, outdoor occupations, limited healthcare access, and systemic barriers in disaster response.
- **Staggering Costs:** Wildfires incur billions of dollars in losses. For example, the 2020 wildfire season alone caused an estimated \$16.5 billion in direct damages (Resources for the Future, 2025). These costs include property destruction, lost jobs, and rising healthcare expenses, with Latino workers and families least able to absorb the shocks.



FOUR PILLARS OF IMPACT

1. HEALTH IMPACTS

Wildfire smoke exposes Latino workers and families to disproportionate risks of asthma, cardiovascular disease, pregnancy complications, and mental health trauma, among others. Outdoor workers, who make up 75-80 percentage of the farm labor force, often labor without adequate protection. Post-fire cleanup exposes many Latino workers to toxic ash and debris, compounding their health risks.

2. ECONOMIC & WORKFORCE IMPACTS

Wildfires devastate local economies by displacing families, disrupting tourism, and destroying jobs. Latino workers are heavily represented in outdoor and service industries most affected by closures and poor air quality. Rising insurance costs and limited financial safety nets push many Latino families into long-term economic insecurity.

3. ENVIRONMENTAL JUSTICE & INDIGENOUS KNOWLEDGE

Environmental racism and historic disinvestment have placed Latino and other communities of color in wildfire-prone areas. Indigenous fire stewardship and Latino ancestral ecological knowledge offer proven strategies for resilience, yet policies often overlook or restrict these approaches.

4. POLICY & COMMUNITY SOLUTIONS

Latino leadership and participation are essential in building equitable solutions. Effective strategies include expanding prescribed burns and Indigenous partnerships, implementing bilingual emergency alerts, protecting outdoor workers, and strengthening housing resilience. Data collection that disaggregates impacts by race and ethnicity is critical to ensure resources reach the communities most affected.



RECOMMENDATIONS

1.

INTEGRATE INDIGENOUS AND LATINO KNOWLEDGE

Incorporate Indigenous fire stewardship and Latino community-based practices into wildfire management and policy.

2.

EXPAND PUBLIC HEALTH PROTECTIONS

Implement bilingual emergency alerts, widespread smoke monitoring, and clean air shelters to protect vulnerable populations.

3.

PROTECT WORKERS

Establish heat and smoke safety standards, ensure access to paid leave, and provide protective equipment for outdoor and low-wage workers.

4.

INVEST IN HOUSING AND COMMUNITY RESILIENCE

Fund home hardening, evacuation planning, and recovery support in Latino neighborhoods to strengthen wildfire resilience.

5.

IMPROVE DATA AND EQUITY FOCUS

Collect and utilize data on wildfire impacts disaggregated by race/ethnicity to guide equitable policy and funding decisions.

CALL TO ACTION

Wildfires are reshaping our landscapes, our health, and our communities. For Latino families, they represent not only a climate and environmental challenge but also an equity and justice crisis. By acting now, with culturally grounded, science-based, and community-driven solutions, we can protect lives, safeguard ecosystems, and ensure all communities, especially those most at risk, have the resources to thrive in the face of this growing threat.



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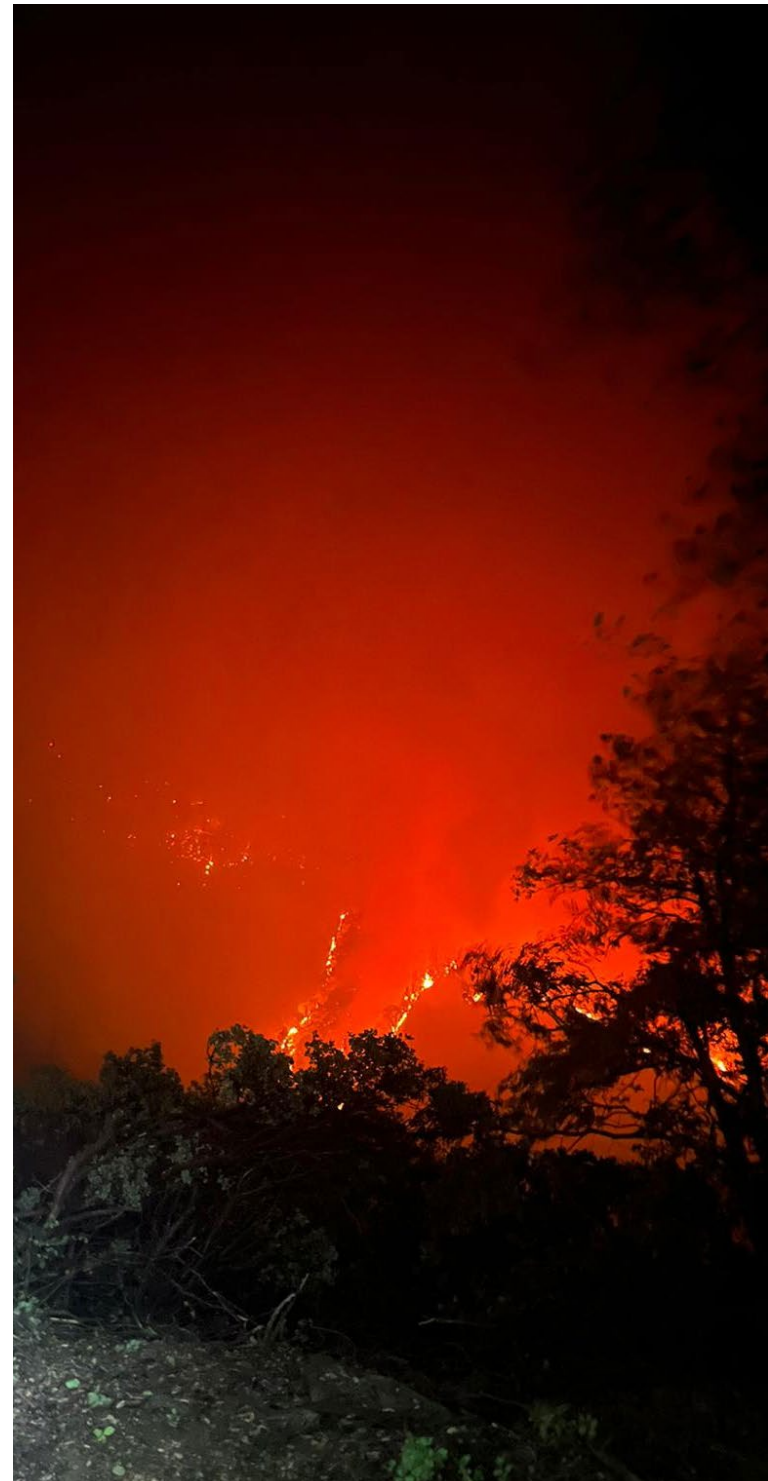
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INTRODUCTION

Wildfires are no longer isolated, seasonal events, they are a **national crisis** affecting more than **115 million people across the United States** (Headwaters Economics, 2024). Fueled by climate change, poor land management, and systemic inequities, wildfires are burning hotter, lasting longer, and causing greater destruction to communities, ecosystems, and economies from California to the Midwest, South, and Northeast (NASA, 2024; NOAA, 2023).

For **Latino families**, the stakes are particularly high. Many live and work in fire-prone regions, often in **outdoor or service jobs** that place them directly in harm's way. When wildfires strike, these **communities experience disproportionate health impacts**, from respiratory and cardiovascular disease to pregnancy complications and mental health strain, alongside higher rates of displacement and fewer resources for recovery. For example, **Latino and Black households are significantly less likely to receive Federal Emergency Management Agency (FEMA) disaster assistance** than white households following climate-related disasters (Wildfire Risk to Communities, 2024; FEMA, 2023). Barriers such as **limited access to health insurance, bilingual emergency alerts, and equitable disaster aid compound these risks**.

At first glance, a wildfire may appear as a single event to contain. In reality, it is a convergence of crises, climate, health, economic, and social, that expose deep structural inequities. **Addressing wildfires requires not only emergency response** but also prevention, preparedness, and community empowerment through education, workforce protections, and Indigenous-led land stewardship.

This white paper explores the wildfire crisis through **four interconnected pillars of impact**:

HEALTH IMPACTS

How wildfire smoke & hazards create cascading health crises that Latino communities are least equipped to withstand.

ECONOMIC & WORKFORCE IMPACTS

How wildfires destabilize livelihoods, housing, & local economies, with especially harsh consequences for Latino workers & families.

ENVIRONMENTAL JUSTICE & INDIGENOUS KNOWLEDGE

How systemic inequities heighten vulnerability, and how traditional stewardship offers a path to resilience.

POLICY & COMMUNITY SOLUTIONS

The strategies and actions needed to protect communities and build equitable, culturally informed wildfire resilience.

By weaving together **research, lived experience, and policy insight**, this paper demonstrates that wildfires are not only a **climate emergency** but an equity & justice crisis, one that demands solutions centered on **Latino voices**, Indigenous knowledge, & shared stewardship of the land.



CONTEXT & CHALLENGES

Wildfires are disruptive crises that shape nearly every dimension of life, health, livelihoods, housing, & access to nature.

Their frequency and intensity continue to **rise across the US** due to climate change, decades of aggressive fire suppression, and development patterns that **push homes and jobs into fire-prone landscapes** (Headwaters Economics, 2024; Kreider et al., 2024).

For Latino communities, these risks are **intensified** by where people live and the work they do. Many families reside in the wildland–urban interface (WUI), areas where homes border **highly flammable landscapes**, putting millions more people at direct risk as the WUI continues to expand nationwide (Chen et al., 2022). Latino workers are **overrepresented in outdoor and service occupations** such as agriculture, construction, landscaping, hospitality, and domestic work, jobs that make them particularly vulnerable to smoke exposure, heat, and sudden income loss (University of Notre Dame, 2011; U.S. Bureau of Labor Statistics [BLS], 2023). These inequities deepen when combined with barriers such as language, healthcare access, and disaster recovery gaps.



Despite these challenges, **Latino and Indigenous communities bring resilience** through ancestral knowledge and collective action. Indigenous fire stewardship and Latino ecological traditions offer time-tested models for prevention and recovery. For example, California Senate Bill 310 affirmed tribal sovereignty over cultural burning, removing bureaucratic barriers and enabling traditional stewardship practices (CA Legislature, 2019).

As the WUI expands, inequities in planning and recovery systems become increasingly apparent. Communities of color, including Latino, Black, and Native populations, **face roughly 50 percent higher wildfire vulnerability** due to under-resourced local planning. For example, fewer fire stations or evacuation routes in low-income areas (Society for Risk Analysis/SRA, 2023), and disaster aid systems that historically favor wealthier, whiter neighborhoods (Headwaters Economics, 2024; Just Solutions Collective, 2024).

“ I’ve seen the impacts of fires firsthand. The loss of trails and monuments can jeopardize the ability of all communities, regardless of income, to enjoy the outdoors. Fires don’t just take away landscapes; they cut off opportunities for families to experience and connect with nature. ”

Community Voice: Nate Lillge, Certified California Naturalist



The January 2025 Southern California wildfires revealed how these disparities intersect: **prolonged smoke** events and inadequate emergency systems placed low-income Latino and immigrant families at disproportionate risk.

Looking ahead, implementing culturally grounded preparedness strategies, along with multilingual alerts, workplace protections, access to healthcare and mental health services, and community-led land management, will be vital to safeguarding Latino families from future wildfire impacts. (U.S. Environmental Protection Agency [EPA], 2023; Just Solutions Collective, 2024).

This paper builds upon these realities, combining data, stories, and analysis to illustrate how climate, infrastructure, and inequity converge, and how community leadership can chart a path forward through four pillars of impact: health, economy, justice, and policy.

PILLAR 1: HEALTH IMPACTS

Wildfires are a public health crisis, and Latino families are among the most exposed and least protected.

Wildfires have a profound and far-reaching effect on communities far beyond the flames, disrupting health, livelihoods, and local economies. Wildfire smoke episodes can affect tens of millions of people in severe seasons, driving spikes in PM_{2.5} exposure and related health risks (Health Effects Institute, 2024; EPA, 2023).

For Latino communities, these harms are amplified by geographic, economic, and occupational factors: **many live in high-risk fire zones, work in outdoor or essential industries**, and face systemic barriers to healthcare and disaster response. Limited access to bilingual emergency information, culturally responsive care, and protective equipment further increases risks of respiratory, cardiovascular, and mental health complications (U.S. Environmental Protection Agency [EPA], 2023; Just Solutions Collective, 2024).

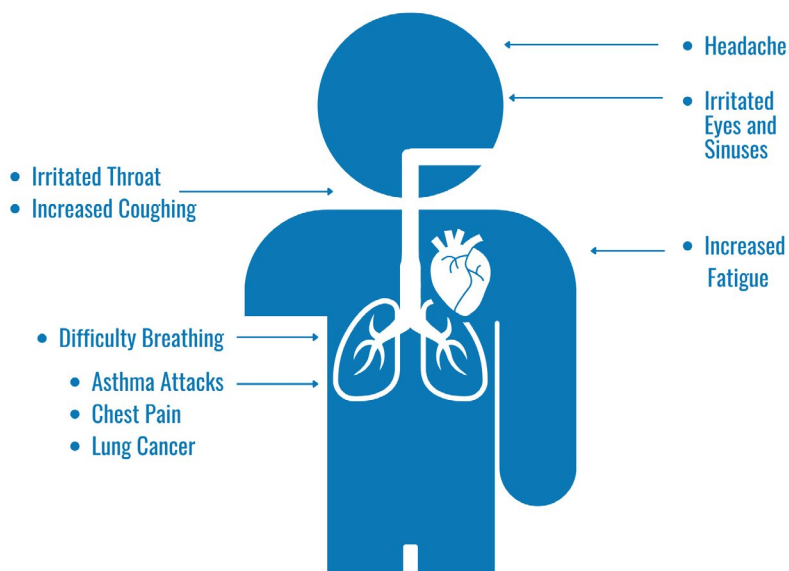
Compounding these risks, many **Latino workers lack access to paid leave, job protections, or the financial flexibility to refuse unsafe work during wildfire events**. As a result, outdoor workers frequently continue working on poor air-quality days, facing elevated exposure levels and higher rates of emergency medical visits linked to smoke-related illness (American Psychological Association [APA], 2024; Health Effects Institute [State of Global Air], 2024).



AIR QUALITY AND EXPOSURE

Wildfire smoke is a complex mixture of gases: carbon monoxide (CO), carbon dioxide (CO₂), nitrogen oxides (NO_x), sulfur dioxide (SO₂), and volatile organic compounds (VOCs), along with fine particles known as particulate matter (PM). The smallest particles, PM_{2.5}, measure 2.5 micrometers or less, about one-twenty-fifth the width of a human hair, and can penetrate deep into the lungs and enter the bloodstream, causing both short- and long-term health problems (U.S. Environmental Protection Agency [EPA], 2023).

Fine particle pollution from wildfire smoke can cause:



Short-term exposure to PM_{2.5} can worsen coughing, wheezing, and breathing difficulty; chronic exposure is linked to asthma, lung cancer, acute lower respiratory infections, and chronic obstructive pulmonary disease (COPD) (Health Effects Institute [State of Global Air], 2024).

While PM_{2.5} affects everyone, vulnerable groups, including children, older adults, pregnant women, and people with pre-existing conditions, face the highest health risks. Outdoor workers and people in low-income or under-resourced communities are disproportionately exposed because they often lack access to air-conditioned or filtered environments. Latino families, in particular, are less likely to own HEPA air filters or have the financial means to upgrade HVAC systems, leaving them especially at risk from indoor smoke infiltration (EPA, 2023; Just Solutions Collective, 2024).

In many regions, wildfire smoke can linger for weeks, seeping through windows, vents, and small cracks in walls. Latino households, especially renters or families in older housing, experience higher rates of indoor smoke exposure. These inequities in housing quality and access to protective equipment turn air quality into a social-justice issue, where economic status determines one's ability to breathe safely.

“ Last year, there was a big fire near Chico in Butte County. It destroyed many homes and left clouds of smoke that lasted for weeks. Even after officials said it was contained, we could feel the residue in the air while working in the fields. As a laborer, knowing your rights is very important. Ask for and wear protective gear. No one should fear losing their job for protecting their health, even when conditions are unsafe.

- **COMMUNITY VOICE:** GONZALO SÁNCHEZ OBRAGÓN, FARMWORKER

”

LATINO REPRESENTATION IN OUTDOOR WORKSPACES

80%

of farmers identify as Latino or Hispanic.

35%

of workers that identify as Latinos work in the landscaping industry.

31%

of construction workers are Latinos.



RATES OF CHRONIC CONDITIONS

11.5%

Of Hispanic adults have diabetes, compared to **6.9 percent** of non-Hispanic white adults.

43%

Of Hispanic women & **52 percent of Hispanic men** have cardiovascular disease.

PM_{2.5}

Exposure is associated with **preterm birth, low birthweight, impaired fetal lung development, congenital abnormalities, and stillbirth.**



Latinos make up roughly **31 percent of construction workers, 75-80 percent of farmworkers, and 35 percent of landscaping workers** (University of Notre Dame, 2011; U.S. Bureau of Labor Statistics [BLS], 2023). These jobs face some of the highest levels of particulate exposure during wildfires, yet workers often labor without adequate protective gear, clean-air shelters, or cooling stations. After fires, many also take part in cleanup and debris removal, where exposure to toxic ash, heavy metals, and hazardous chemicals compounds health risks. Many continue working on poor-air-quality days because they lack paid leave or job protections, compounding exposure and illness.

CARDIOVASCULAR, MATERNAL, AND NEUROLOGICAL HEALTH

Exposure to fine particulate matter (**PM_{2.5}**) is **strongly associated with cardiovascular and neurological disease, as wildfire smoke triggers inflammation, oxidative stress, an imbalance in the body's antioxidant defenses, and endothelial dysfunction, or damage to blood-vessel linings.** These processes increase the risk of heart attack, arrhythmia, and heart failure, while long-term exposure is linked to stroke, dementia, and Alzheimer's disease (Health Effects Institute [State of Global Air], 2024; U.S. Environmental Protection Agency [EPA], 2023).

For Latino adults, these risks are compounded by pre-existing health disparities. Rates of chronic conditions that heighten vulnerability during smoke events are consistently higher in Latino populations: **11.5 percent of Hispanic adults have diabetes, compared to 6.9 percent of non-Hispanic white adults**, significantly raising the risk of cardiovascular events during prolonged smoke exposure. Additionally, **43 percent of Hispanic women and 52 percent of Hispanic men** have cardiovascular disease. While age-adjusted heart-disease mortality is lower for Hispanics than for non-Hispanic whites, Latino communities face higher burdens of key risk factors (e.g., diabetes) and barriers to prevention and treatment, which wildfire smoke can exacerbate (Office of Minority Health, 2024; Health Effects Institute, 2024).

Wildfire smoke also poses unique risks for pregnant women and infants. Studies show that PM_{2.5} exposure is associated with preterm birth, low birthweight, impaired fetal lung development, congenital abnormalities, and stillbirth (Fang et al., 2020; Williamson, 2023). These adverse outcomes can lead to lifelong respiratory and

developmental challenges, reinforcing intergenerational cycles of health inequity.

Together, these findings highlight how wildfire exposure compounds existing structural health disparities. Addressing cardiovascular, maternal, and neurological risks requires culturally competent healthcare access, expanded community air-quality monitoring, and outreach that reaches Latino families before, during, and after wildfire events.

MENTAL HEALTH AND FRONTLINE STRESS

Beyond physical illness, wildfires inflict profound psychological and emotional strain. The trauma of destruction, displacement, and weeks of smoke-filled skies can trigger stress, fear, post-traumatic stress disorder (PTSD), depression, and anxiety (National Institutes of Health [NIH], 2024). Prolonged exposure to PM_{2.5} has also been associated with **increased depression and mood disorders** (Brownstein, 2024). Following major wildfire events, hospitals and clinics report measurable surges in emergency visits for mental-health conditions, particularly among women, adolescents, and older adults (American Psychological Association [APA], 2024).

For Latino families, these effects are amplified by the stress of job insecurity, housing instability, and protecting family members during disasters. Data indicate that Latino communities experience about **30 percent higher rates** of emergency-room visits for depression compared with other groups, yet only **33 percent of Latino adults** receive mental-health treatment, compared with a national average of **43 percent** (APA, 2024; Just Solutions Collective, 2024). Despite this need, post-disaster mental-health support is often underfunded, short-term, and linguistically inaccessible, especially in rural or Spanish-speaking communities. When federal disaster declarations are not issued, Latino and Black families frequently rely on under-resourced, community-led organizations to fill the gap, underscoring the urgency of equitable, long-term mental-health investments.



“

I've worked for Cal Fire since 2022. My first fire was on the Fourth of July, and we fought for days without rest - 24-hour shifts, sometimes more. It wears on you physically and mentally. People on the frontlines need more resources, both mental and physical. For me, prayer helps; knowing my limits and pacing myself keeps me going.

-Community Voice:
Raynel McNealey, Firefighter

”

30%

Latino communities experience about **30 percent higher rates of emergency-room visits for depression** compared with other groups.

33%

Only **33 percent of Latinos receive mental-health treatment** compared with a national average of 43 percent.

PM_{2.5}

Has also been associated with increased **depression** and **mood disorders**.



Firefighters like Raynel face extreme mental-health pressures from cumulative exposure to trauma and exhaustion. Their experiences mirror the broader need for **comprehensive support systems**, including counseling, culturally competent services, and access to paid recovery time, for both responders and the communities they serve.

POST-FIRE HAZARDS AND HEALTHCARE BARRIERS

Post-fire cleanup involves hazardous debris such as batteries, propane tanks, pesticides, cleaning chemicals, and contaminated soil. While the U.S. Environmental Protection Agency (EPA) and state agencies oversee hazardous material removal, many cleanup crews are Latino contractors and day laborers who often lack certified protective equipment or training. As a result, they face elevated exposure to toxic ash, dust, and heavy metals, increasing long-term risks of respiratory and neurological illness (EPA, 2023; Just Solutions Collective, 2024).

Systemic inequities also make it harder for Latino communities to access healthcare during and after wildfires. Latinos remain more likely to be uninsured or under-insured, with high out-of-pocket costs discouraging care even for serious conditions. Barriers such as language, limited culturally competent providers, and transportation disruptions further restrict access to essential treatment (U.S. Department of Health and Human Services, Office of Minority Health [OMH], 2024).

Meanwhile, wildfires place intense strain on local healthcare systems. Hospitals in affected regions report surges in patients with burns, respiratory distress, and cardiovascular emergencies. Many of these patients lack adequate insurance coverage, creating uncompensated-care burdens that erode hospital revenues just as operational costs rise. In rural and low-resource areas, these financial pressures can threaten the stability of entire health networks (Danford, 2025). Economic analyses estimate that wildfire-related health costs in the United States, including premature deaths, hospitalizations, and emergency visits, reach as high as \$36 billion annually (Hirji, 2024, Bloomberg Green).

FATAL CONSEQUENCES

Air pollution is now among the world's leading environmental causes of death. Polluted air contributes to roughly **8 million deaths globally each year**, including about 700,000 children under five, and an estimated **16,000 to 30,000 deaths annually** in the United States (Health Effects Institute [State of Global Air], 2024; Borunda, 2024). Fine-particle pollution (**PM_{2.5}**) **alone accounts for about 4.7 million global deaths, and studies attribute roughly 95 percent of U.S. premature pollution-related deaths to PM_{2.5} exposure** (Health Effects Institute, 2024).

PM_{2.5} exacerbates respiratory and cardiovascular conditions, increases susceptibility to infections such as pneumonia, and, when combined with the mental-health and neurological impacts of wildfire trauma, elevates risks of premature mortality, especially among vulnerable populations such as the elderly, children, and outdoor workers.

Although direct fire-related fatalities are fewer, they remain significant. Between 2014 and 2024, the National Interagency Fire Center (NIFC) recorded 159 deaths in the United States from burn injuries

or entrapment, though totals vary due to incomplete reporting. The **2023 Maui wildfires**, which claimed more than 100 lives, stand as the deadliest U.S. wildfire in over a century (Fortin & Hassan, 2024, The New York Times).

The health consequences of wildfires extend well beyond immediate flames or smoke. They intertwine physical, mental, and environmental inequities that disproportionately affect Latino families, those who labor outdoors, live near fire-prone areas, and face the steepest barriers to healthcare. From toxic air and cardiovascular stress to maternal and mental-health effects and the hidden dangers of post-fire cleanup, the toll is cumulative and preventable. Yet amid these challenges lies an opportunity: to build an equitable system of protection where every family, worker, and first responder has access to clean air, safe work conditions, and timely care.

Addressing these health impacts is not only a matter of environmental justice but of **public health and human dignity**.

8 MILLION DEATHS

Globally each year, including about 700,000 children

16,000 TO 30,000

Deaths annually in the U.S

PM_{2.5}

Accounts for about 4.7 million global deaths & studies attribute roughly 95 percent of U.S. premature pollution-related deaths to PM_{2.5} exposure (Health Effects Institute, 2024).

2023 MAUI WILDFIRES

Claimed more than 100 lives, stand as the deadliest U.S. wildfire in over a century (Fortin & Hassan, 2024, The New York Times).

PILLAR 2: ECONOMIC & WORKFORCE IMPACT

Wildfires not only destroy homes and landscapes but also unravel local economies, amplifying inequality across regions and industries. For Latino workers and families, these losses reverberate deeply, affecting livelihoods, housing stability, and long-term financial security.

Latinos make up large portions of industries with limited labor protections or access to benefits: they represent **31 percent of construction workers, 75-80 percent of farmworkers, and 35 percent of landscaping workers**

(U.S. Bureau of Labor Statistics [BLS], 2023; University of Notre Dame, 2011). Within the domestic-work sector, **29 percent of all domestic workers are Latino, 62 percent of house cleaners are Latina women, and nine in ten domestic workers overall are women** (Pérez, 2024; Wolfe et al., 2020). Many of these positions lack formal contracts, paid leave, health insurance, and unemployment coverage, leaving workers particularly vulnerable when wildfires disrupt work.

Evacuations, damaged housing, or hazardous air conditions can cause sudden income loss for workers who rely on continuous employment. Construction and agriculture often experience prolonged project delays, while outdoor and hospitality workers face reduced hours or temporary layoffs. These disruptions ripple across families and communities, reducing household stability and long-term financial security.

ECONOMIC LOSSES AND INDUSTRY DISRUPTION

Over the last decade, wildfires have destroyed more than 129,000 structures nationwide (Headwaters Economics, 2020). These losses translate into billions of dollars in direct property damage and cascading economic effects. Industries such as tourism, hospitality, and retail are hit particularly hard, facing temporary or permanent closures, layoffs, and revenue loss. Infrastructure damage, evacuation orders, and prolonged utility outages compound these disruptions.

In Los Angeles County, the 2025 wildfires caused approximately \$4.6 billion in economic losses, equivalent to a 0.48 percent decline in county-level GDP (Li & Yu, 2025). Wildfires cause ripple effects across employment and economic systems. Latino workers, disproportionately employed in outdoor, hospitality, and service sectors, often lose jobs or income due to smoke, evacuations, or damage to local businesses. Wildfire-related business closures can last months, forcing many households to deplete savings or take on debt to survive the interim. Insurance challenges and delayed recovery funds further widen wealth gaps, as documented in the Wildfire Risk to Communities “Insurance and Recovery Challenges” report (2024).

The **2023 Maui wildfires** further demonstrate the far-reaching economic consequences of climate-driven disasters. In Lahaina, where tourism employs over half the

population, over 2,000 homes were lost, visitor spending fell by 75 percent, and thousands of residents were displaced. These patterns echo those seen in Latino tourism corridors across the mainland, revealing the cascading effects of wildfire on jobs, housing, and local economies.

Los Angeles Wildfires in 2025

caused a
0.48%
Decline in
County-Level GDP

\$4.6 billion
in losses



CASE STUDY: LAHAINA, HAWAII

*The 2023 Lahaina wildfire offers a striking example: more than 2,000 homes were lost, and local spending declined by nearly **75 percent** within three months of the fire (Kealoha, 2025; See Appendix B for details). Latino and Native Hawaiian families faced compounded barriers, limited insurance coverage, slower FEMA processing, and inadequate translation of recovery materials, all of which slowed recovery and deepened economic distress.*

Tourism and recreation, where Latinos make up more than 30 percent of accommodation and food-service workers, are among the sectors most affected. Wildfires deter visitors, damage attractions, and reduce available lodging, resulting in significant job and revenue losses. Outdoor recreation also suffers: an average of 7,500 wildfires each year burn 1.5 million acres of National Forests and Grasslands, destroying wildlife habitat and polluting water systems (U.S. Forest Service, 2023).

For example, the 2025 Dragon Fire in Grand Canyon National Park destroyed 70 structures, including visitor facilities and employee housing, displacing hundreds of workers and halting local economic activity. These losses are particularly meaningful for Latino families, who consistently express strong connections to outdoor spaces: 85 percent of Latinos support protecting public lands and national monuments (Hispanic Access Foundation, 2024).

LAND USE AND CLIMATE PRESSURES

Economic vulnerability is also shaped by land-use policy. The growing Wildland–Urban Interface (WUI) continues to expand into fire-prone landscapes, driving up property insurance costs and pricing out families already at risk. When insurance becomes unavailable or unaffordable, communities are left **exposed to total loss**. These dynamics, layered with climate pressures and inequitable recovery systems, illustrate how wildfire economics and environmental justice are inseparable.

Beyond immediate destruction, poor land-use planning and vegetation mismanagement exacerbate wildfire risk. Replacing native vegetation with flammable non-native plants, golf courses, or sprawling urban development increases fuel loads. Combined with rising global temperatures and prolonged droughts, these conditions make fires burn hotter and faster (Kreider et al., 2024; Headwaters Economics, 2024).

Protecting communities and preserving landscapes requires proactive wildfire management, equitable land-use policies, and investment in community resilience, ensuring that Latino and other frontline populations are not left behind in recovery and rebuilding efforts.

The economic toll of wildfires is measured not only in billions of dollars lost but in livelihoods uprooted and communities struggling to rebuild. For Latino workers, who make up a significant share of the outdoor and service sectors that sustain regional economies, every burned field, closed hotel, or damaged home represents both financial loss and deep personal upheaval. The intersection of underinsured labor, rising housing costs,



and fragile local economies exposes how environmental disasters amplify existing inequities in work and wealth.

Yet resilience persists. **Latino workers, families, and small-business owners are often among the first to rebuild**: repairing homes, restoring parks, and reviving local tourism. Their participation is vital to economic recovery, but lasting equity requires more than rebuilding what was lost. It demands policies that ensure safe working conditions, fair wages, disaster insurance coverage, and access to capital for those most affected.

Addressing the economic dimensions of wildfire recovery opens the door to a larger truth: climate resilience is inseparable from social and environmental justice. The next section explores how systemic inequities, rooted in land use, environmental racism, and the exclusion of Indigenous and Latino knowledge, shape who bears the brunt of wildfire impacts and who holds the wisdom to lead us toward a more balanced relationship with the land.

LATINOS ARE THE FIRST TO:



**REBUILD
HOMES**



**REBUILD
PARKS**



**REVIVE
TOURISM**

PILLAR 3: ENVIRONMENTAL JUSTICE & INDIGENOUS KNOWLEDGE

Addressing the economic dimensions of wildfire recovery opens the door to a larger truth: climate resilience is inseparable from social & environmental justice.

The next section explores how systemic inequities, rooted in land use, environmental racism, and the exclusion of Indigenous and Latino knowledge, shape who bears the brunt of wildfire impacts and who holds the wisdom to lead us toward a more balanced relationship with the land.

ENVIRONMENTAL RACISM AND SOCIAL VULNERABILITY

Environmental racism is a root cause of the social and physical vulnerabilities that heighten wildfire risk for **Latino communities**. The term refers to the systemic siting of environmental hazards, such as industrial zones, highways, and waste facilities, within or near historically marginalized neighborhoods, combined with barriers that limit political, social, and economic participation in decision-making (Bullard, 2000; Mohai et al., 2019).

This legacy is deeply intertwined with discriminatory housing and labor practices, including redlining, segregation, and exploitative employment systems that restricted access to safer neighborhoods and wealth accumulation. One defining example is redlining, a federal practice established during the Great Depression by the Home Owners' Loan Corporation (HOLC) to stabilize the housing market. Beginning in the 1930s, HOLC maps graded neighborhoods in more than 200 U.S. cities according to racial composition, housing quality, and perceived "investment risk." Communities were labeled from "A" (Best - Green) to "D" (Hazardous - Red). These "redlined" areas were overwhelmingly home to Black, Latino, and immigrant families, and were systematically denied loans and infrastructure investment (Motairek et al., 2022; Nelson et al., 2023).

Although redlining was outlawed by the Fair Housing Act of 1968, its legacy persists. Decades of disinvestment have resulted in neighborhoods with higher pollution exposure,



lower life expectancy, and greater social vulnerability, patterns now mirrored in wildfire risk. Research shows that formerly redlined neighborhoods experience higher urban heat, poorer air quality, and greater proximity to hazardous land uses, all of which compound wildfire danger (Hoffman et al., 2020; Hennighausen & James, 2024).

As **housing affordability declines**, displacement from gentrifying urban cores has pushed many Latino families toward urban peripheries and the Wildland-Urban Interface (WUI) which are areas more susceptible to wildfires. These moves are often motivated by affordability and access to jobs but come with trade-offs in safety and infrastructure. Many WUI communities have limited emergency services, longer response times, and underfunded fire stations compared with wealthier suburban counterparts (SRA, 2023). The result is a pattern of "climate displacement" where Latino residents, in search of affordable housing, are unintentionally funneled into higher-risk zones. These structural inequities amplify the costs of climate change and natural disasters, leaving Latino and Indigenous residents disproportionately exposed to environmental hazards and economic instability.



INDIGENOUS KNOWLEDGE AND LATINO ECOLOGICAL TRADITIONS

Any serious discussion of wildfire management and resilience must recognize **Indigenous leadership and ancestral fire stewardship**. For thousands of years, Indigenous nations across North America have used cultural burning, the intentional and skillful use of low-intensity fire, to care for the land, manage vegetation, sustain biodiversity, and **protect communities**. These practices are deeply tied to cultural identity, ceremony, and ecosystem health, helping regenerate native plants, improve wildlife habitat, and prevent the accumulation of hazardous fuels (Australian Museum, n.d.; Lake & Christianson, 2019).

Similarly, Latino communities hold **ecological knowledge** rooted in centuries of land stewardship across Latin America, understanding seasonal cycles, soil health, and water conservation. Integrating these traditions with modern fire management creates a path toward resilience that honors cultural wisdom while meeting contemporary environmental challenges.

Prescribed fire, sometimes referred to as controlled burning, is a contemporary land-management tool grounded in similar ecological principles. When properly planned and implemented, prescribed burns help restore diverse habitats, reduce fuel loads, and protect endangered species. The National Park Service (2023) and U.S. Forest Service (2023) both recognize prescribed fire as one of the most effective strategies to reduce the risk of catastrophic wildfires.

However, **significant barriers continue** to limit the application of these practices. Regulatory complexity, agency-specific permit requirements, smoke-management restrictions, and limited funding often prevent Indigenous and community-led burning. In many regions, tribal nations must still seek approval from state or federal agencies to conduct cultural burns, undermining sovereignty and perpetuating inequities. Public misunderstanding of fire's ecological role, and growing populations in fire-prone areas unfamiliar with its benefits, further impede progress.

Prescribed Burn Associations (PBAs) are one promising model helping to overcome these barriers. PBAs are grassroots partnerships of landowners, ranchers, and community members who share knowledge, equipment, and resources to plan and safely conduct prescribed fires (Wildland Fire Learning Network, 2024). While the federal government owns about **28 percent of U.S. land**, the remainder is primarily privately owned, making local collaboration essential. Fire does not stop at jurisdictional boundaries, and neither should our management strategies.

Integrating Indigenous fire stewardship and Latino ancestral ecological knowledge offers a powerful, community-centered approach to resilience. Engaging both Indigenous and Latino communities in fire resilience efforts expands the network of environmental guardianship and reaffirms collective responsibility for sustaining ecosystems. Policies such as California Senate Bill 310 (2019), which affirms tribal sovereignty over cultural burning and simplifies permitting processes, demonstrate the value of pairing Indigenous leadership with supportive governance. Investing in Indigenous-Latino partnerships, bilingual education, and culturally grounded land management can transform wildfire mitigation from a reactive effort into a living practice of reciprocity with the land.

Wildfires do not occur in isolation; they are symptoms of deeper social and ecological imbalance. The legacies of environmental racism and land mismanagement have shaped where Latino and Indigenous peoples live, how they access resources, and the risks they face when fire returns to landscapes long deprived of traditional care. Yet within these same communities lies the knowledge and relationships needed to restore balance.

CASE STUDY: KARUK TRIBE OF NORTHERN CALIFORNIA

The Karuk Tribe of Northern California offers a powerful example. Along the Klamath River, the Karuk have revived cultural burning practices that once sustained forest health, biodiversity, and community safety. These burns reduce fuel loads, encourage native plant regeneration, and protect surrounding communities from catastrophic wildfires, demonstrating how traditional fire stewardship remains a cornerstone of modern climate resilience (Williams, 2025; Lake & Christianson, 2019). A full case study appears in Appendix B.

Indigenous-led restoration extends beyond the mainland. In **Hawai'i, Native Hawaiian** practitioners are restoring elements of the ahupua'a watershed system, a traditional approach linking forest, freshwater, and coastal stewardship, to rebuild ecological balance and reduce wildfire vulnerability. Their work highlights how Indigenous water and land stewardship are essential to resilience across diverse ecosystems. A full case study of the Lahaina restoration effort appears in Appendix B (Kealoha, 2025).

As Indigenous nations reclaim stewardship authority and Latino communities mobilize around environmental justice, a shared path forward is emerging, one rooted in reciprocity, cultural respect, and co-management of natural systems. Recognizing this interconnected leadership is critical for any national wildfire strategy. The next section turns to the policies, partnerships, and community-based solutions that can translate this wisdom into action, ensuring that resilience planning honors both ecological science and the ancestral knowledge that has protected these lands for generations.



PILLAR 4: POLICY & COMMUNITY SOLUTIONS

EQUITABLE AND CULTURALLY GROUNDED APPROACHES

Wildfires are as much a policy failure as an environmental one. **Decades of fragmented land management**, underinvestment in community preparedness, and systemic inequities have left frontline communities, particularly **Latino and Indigenous families**, bearing the brunt of increasing fire severity. As fires grow longer and hotter, the nation's response must evolve from emergency reaction to sustained resilience, rooted in equity, inclusion, and shared stewardship.

Building a more just wildfire response requires addressing both structural inequities and governance gaps that determine who is protected, who receives resources, and who participates in decision-making. Historically, recovery funds, insurance coverage, and mitigation investments have flowed disproportionately to wealthier, whiter communities, while Latino, Indigenous, and rural populations face bureaucratic barriers and under-resourced local governments, and high rates of underinsurance (Just Solutions Collective, 2024; Headwaters Economics, 2024;

Wildfire Risk to Communities, 2024). This inequitable flow of aid **mirrors disparities highlighted** in earlier sections, where Latino families experience slower recovery after disasters and fewer resources for rebuilding, underscoring the need for reform in both funding design and implementation.

A forward-looking policy framework should therefore rest on four core principles:

EQUITABLE ACCESS TO RESOURCES

Guarantee bilingual, culturally relevant communication and fair access to mitigation, insurance, and recovery funding. Ensure grant programs include technical assistance for community-based and Latino-serving organizations.

WORKER AND COMMUNITY PROTECTION

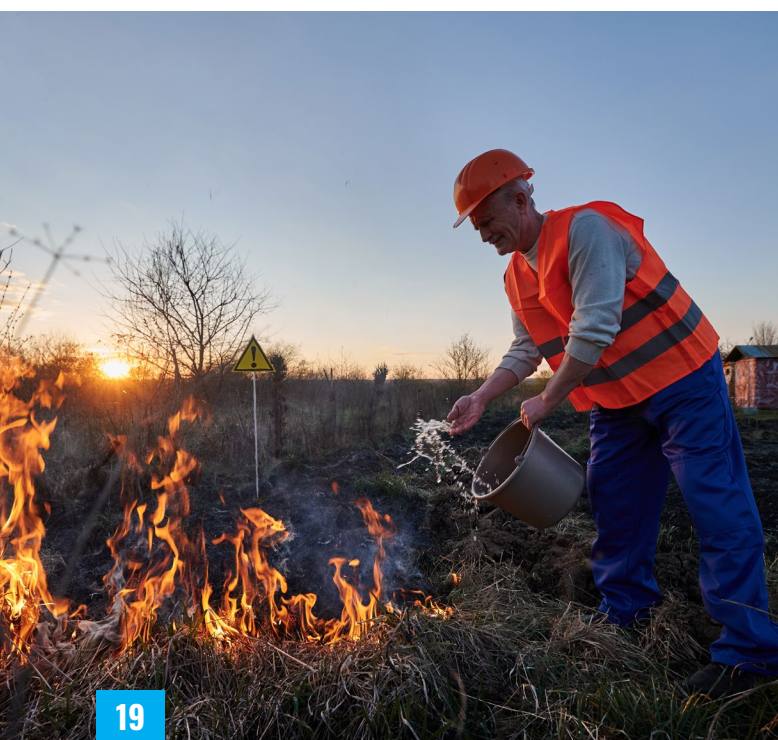
Strengthen legal safeguards, health coverage, and hazard pay for outdoor and essential workers, many of them Latino, during smoke and fire events.

RECOGNITION OF INDIGENOUS & LOCAL LEADERSHIP

Formalize partnerships with Indigenous nations, local nonprofits, and faith-based networks as co-managers of resilience programs, integrating cultural fire stewardship and traditional ecological knowledge.

SUSTAINABLE LAND-USE AND CLIMATE ACTION

Integrate wildfire resilience into broader climate, housing, and infrastructure planning to reduce risk across ecosystems and communities.



Federal and state initiatives are beginning to reflect this shift. Programs such as the **Wildfire Crisis Strategy** (U.S. Forest Service, 2023) and Community Wildfire Defense Grant (CWDG) (U.S. Department of Agriculture, 2024) emphasize fuel reduction, community planning, and local capacity building. However, Latino-serving and tribal organizations often lack the technical assistance or administrative capacity to access these funds. Strengthening equity provisions and simplifying grant processes are essential to ensure these resources reach the communities most at risk.

The path forward lies not only in new legislation but also in inclusive implementation, embedding cultural competence, language access, and community leadership into every level of wildfire governance. **True resilience will come when Latino, Indigenous, and low-income communities are not only recipients of aid, but architects of the systems that protect them.**

POLICY RECOMMENDATIONS

INTEGRATE INDIGENOUS AND COMMUNITY-BASED FIRE MANAGEMENT PRACTICES

Federal and state wildfire strategies should **institutionalize traditional ecological knowledge (TEK)** as a core element of fire management. Indigenous systems, such as the Karuk Tribe's cultural burning practices and the **Hawaiian ahupua'a watershed management system**, demonstrate how controlled use of fire and water resources reduces fuel loads, restores biodiversity, and mitigates high-intensity fires. Policy frameworks must formally recognize and fund Indigenous-led fire stewardship, simplify permitting, and expand co-management agreements that enable tribes to work in partnership with agencies.

Equally important, these frameworks should invite **Latino community participation** in culturally informed fire stewardship, leveraging ancestral knowledge of farming, forestry, and land management.

EXPAND PRESCRIBED FIRE PROGRAM AND LOCAL PARTICIPATION

Prescribed burns and cultural burnings should be scaled through coordinated partnerships among landowners, **Prescribed Burn Associations (PBAs)**, conservation nonprofits, and government agencies. These collaborative programs reduce wildfire severity and promote ecosystem health while offering training, workforce development, and employment pathways for Latino and rural residents.

Policies should **streamline regulatory processes**, fund training and certification programs, and reduce administrative barriers for community-based burning while maintaining strong safety standards. Integrating bilingual training resources can also strengthen participation from Spanish-speaking communities.



STRENGTHEN WORKER PROTECTION AND HEALTH EQUITY POLICIES

Outdoor and essential workers, especially those in agriculture, construction, and landscaping, face some of the highest risks during wildfire and smoke events. Policies should mandate:

- **Hazard pay and mandatory rest periods** during poor air quality days.
- **Employer-provided protective equipment** (e.g., N95 respirators) and access to clean-air shelters.
- **Paid sick and evacuation leave for workers** affected by fires or displacement.
- **Inclusion of undocumented workers** in disaster-relief and unemployment programs. These policies should align with **EPA smoke preparedness guidelines** and state occupational safety standards, ensuring that wildfire protection extends to all workers, regardless of immigration status.

ENHANCE PUBLIC HEALTH PREPAREDNESS AND CLEAN AIR ACCESS

Wildfire smoke disproportionately impacts Latino and other vulnerable communities, compounding respiratory and cardiovascular risks. Policies should prioritize:

- **Real-time, bilingual air-quality alerts** (via mobile, radio, and social media).
- **Expanded networks of clean-air shelters** in schools, libraries, and community centers.
- **Funding for HEPA filters and HVAC upgrades** for low-income households.
- **Mobile health units** offering smoke-related care and respiratory screenings. Federal and state agencies (e.g., EPA, CDC, FEMA, USDA) should coordinate preparedness efforts through equitable funding mechanisms targeting communities with high vulnerability indices.

INCREASE PUBLIC EDUCATION, OUTREACH, AND CULTURAL RELEVANCE

Many residents in **fire-prone areas**, particularly Latino families, lack access to culturally relevant information on wildfire risk and preparedness. Policies should **fund bilingual, community-led educational campaigns and faith- and youth-based workshops** that normalize the use of prescribed fire and promote family-level emergency planning. Partnering with trusted messengers, such as churches, community health workers, and local media, ensures that messaging reaches diverse populations and fosters a culture of shared responsibility.

SUPPORT HOUSING, ECONOMIC, AND COMMUNITY RESILIENCE

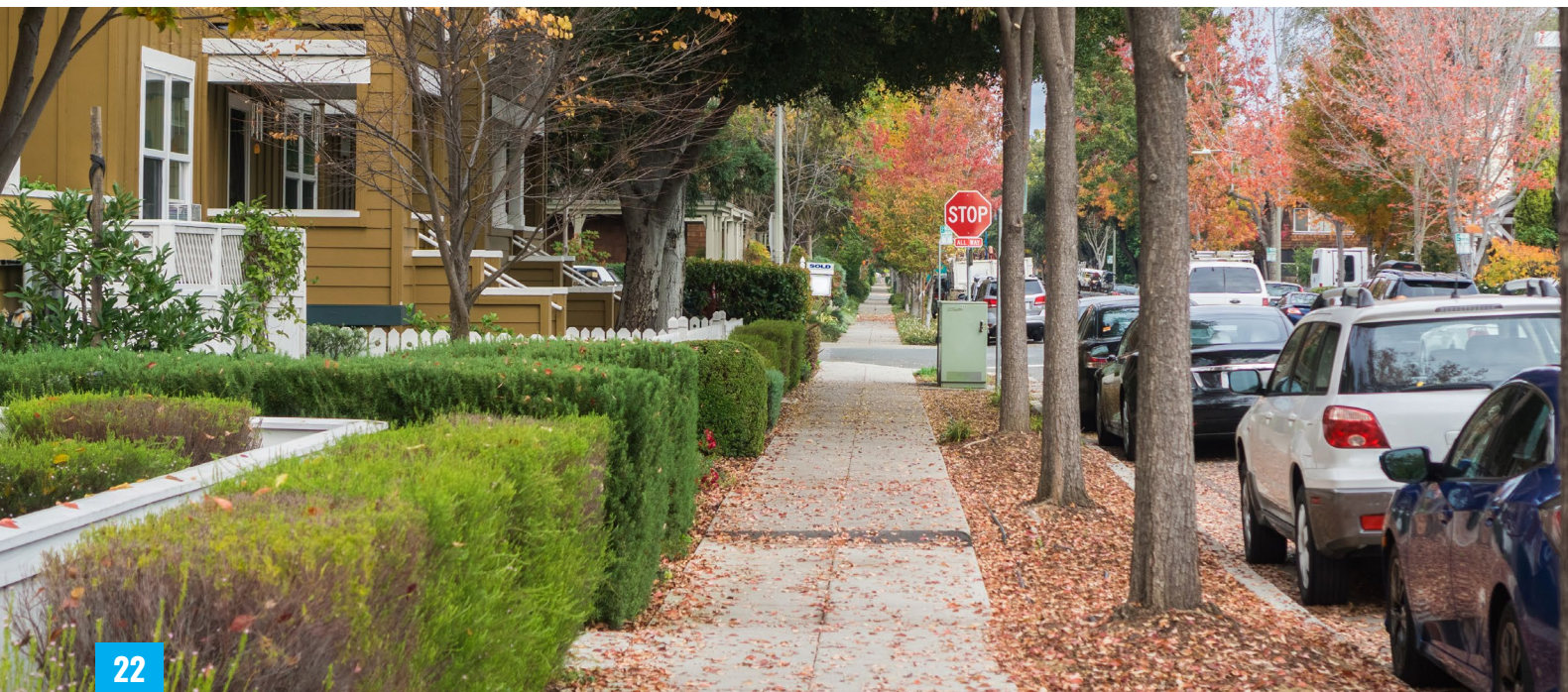
Wildfires destroy homes, disrupt livelihoods, and erode local economies. To address these compounding impacts, policies must:

- **Require affordable, fire-adapted housing standards** in the wildland–urban interface (WUI).
- **Expand disaster insurance coverage and claim accessibility** for low-income and immigrant households.
- **Provide targeted recovery grants** and small-business aid to workers and entrepreneurs in affected sectors such as agriculture, hospitality, and construction.
- **Incentivize resilient infrastructure and climate-smart job creation** to stabilize local economies.
- **Programs like the Community Wildfire Defense Grant** (USDA, 2024) should include equity scoring to prioritize Latino, Indigenous, and rural communities.

IMPLEMENT DATA-DRIVEN MONITORING AND EVALUATION

Effective wildfire management requires transparent, disaggregated data systems that track fuel loads, fire behavior, post-fire recovery, and health and economic impacts. Latino, Indigenous, and other underrepresented communities should be actively included in citizen-science and monitoring programs, ensuring that local knowledge informs adaptation strategies.

Standardized national frameworks for data collection can improve equity in resource allocation and help policymakers assess long-term progress in resilience outcomes.



CALL TO ACTION

COMMUNITY ACTION FOR WILDFIRE RESILIENCE

Policy change and preparedness efforts are **most effective** when they are community-driven. Latino leaders, families, and organizations can play a powerful role in shaping wildfire resilience, from neighborhood readiness to advocacy for equitable recovery and representation.

1. STRENGTHEN LOCAL CAPACITY

Communities can reduce wildfire risk by organizing **local wildfire councils, faith-based groups, or neighborhood associations** that include all stakeholders, residents, emergency services, local governments, and nonprofits.

Develop a **bilingual Community Wildfire Protection Plan (CWPP)** or **Natural Hazard Mitigation Plan** outlining local risks, evacuation routes, and recovery priorities. Regularly update these plans to reflect changing conditions and new community needs (U.S. Fire Administration, 2025).

Effective communication is central to preparedness. Many Latino residents, especially those with Limited English Proficiency (LEP), are often excluded from lifesaving alerts and recovery resources (Just Solutions Collective, 2024).

Communities can close this gap by:

- Requesting **bilingual emergency alerts** and evacuation orders from city and county agencies.
- Encouraging neighbors to enroll in **local alert systems**.
- Partnering with **Firewise USA** and **community-based organizations** to deliver wildfire education directly into Latino neighborhoods.

Learn More: For community-level resources and planning templates, visit the U.S. Fire Administration and Firewise USA programs at www.usfa.fema.gov and www.nfpa.org/firewise.



2. AMPLIFY LATINO LEADERSHIP AND ADVOCACY

Latino voices are essential in shaping equitable wildfire policy and recovery.

Community members can:

- Advocate for **stronger worker protections** from heat and smoke, especially for farmworkers and construction workers.
- Demand **equitable recovery funding** to ensure Latino and low-income neighborhoods are not left behind.
- Call for **Latino representation** on wildfire planning boards, emergency response teams, and climate councils.
- Support **Indigenous fire stewardship** and **sustainable land management policies** that address the root causes of catastrophic wildfires.

Hispanic Access Foundation provides opportunities for Latino advocates to engage directly with policymakers and amplify their voices on national environmental and public health issues.

Resource Spotlight: Explore advocacy and leadership opportunities at hispanicaccess.org. Learn more about Latino advocacy here.

3. ADVANCE DATA EQUITY AND RESEARCH

Data drives policy, and without it, Latino needs are often invisible.

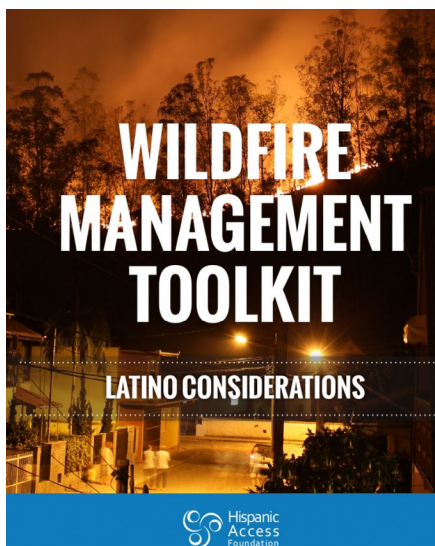
Communities and advocates can urge policymakers to:

- Require wildfire impact data **disaggregated by race, ethnicity, and language access**.
- Fund **long-term health studies** on wildfire smoke exposure in Latino-majority regions.
- Ensure **public reporting** of recovery resource distribution and climate adaptation investments by community demographics.

Robust data collection will ensure that future health protections, funding, and interventions are equitable and evidence-based.

4. BUILD A CULTURE OF PREPAREDNESS

Every household can contribute to community safety. Families can develop bilingual evacuation plans, practice drills, and strengthen their homes against embers through **home-hardening techniques**, using fire-resistant materials and clearing vegetation (Texas A&M Forest Service, n.d.).



Practical Resource: Access the [Hispanic Access Foundation's Wildfire Management Toolkit](#) for bilingual checklists and step-by-step guidance on household preparedness, insurance planning, and community resilience.



Together, these community actions complement the policy reforms outlined above, ensuring that Latino families are not only protected from the immediate dangers of wildfires but also empowered to shape long-term solutions. When neighbors prepare, organize, and advocate together, they build the foundation of a just, climate-resilient future for all.

CONCLUSION



Wildfires are no longer seasonal events. They are a national crisis intensified by climate change, decades of land mismanagement, and systemic inequities. Their effects ripple through every dimension of life, threatening health, housing, jobs, and the very ecosystems that sustain our communities. For Latino families, these dangers are magnified by where they live, the work they do, and persistent barriers to healthcare, information, and recovery resources.

Across this white paper's **four pillars, health, economic stability, environmental justice, and policy and community solutions**, one truth emerges: wildfires are as much a social and equity challenge as an environmental one. Addressing them requires more than containment or cleanup; it demands governance reform, equitable investment, and culturally grounded collaboration.

The knowledge to build resilience already exists. Indigenous fire stewardship, like the **Karuk Tribe's** cultural burning and the Native Hawaiian ahupua'a watershed system, demonstrates how traditional land management protects both people and ecosystems. Latino communities, through generations of ecological wisdom, cooperative spirit, and faith-based resilience, continue to model the power of mutual aid, stewardship, and collective action.

Moving forward, **wildfire resilience must center Latino and Indigenous communities not as beneficiaries, but as architects of solutions, leaders, educators, and innovators shaping the nation's climate future.** Policymakers, funders, and agencies must prioritize bilingual access, fair insurance practices, Indigenous partnerships, and community-driven planning as foundational to national safety and justice.

By uniting ancestral knowledge with modern science, embedding equity into governance, and empowering communities to lead, we can protect lives, safeguard the land, and build a resilient future where all people, and all ecosystems, thrive together.

EPILOGUE: A CALL TO STEWARDSHIP AND HOPE

Across the Americas, fire has always been a force of renewal, a teacher that reminds us of our responsibility to care for the earth and for one another. Today, as wildfires test our courage and compassion, we are called to respond not only with urgency, but with unity and purpose.

Community, culture and faith remind us that resilience is built through relationships between people and the land, and between generations that share a common home. True stewardship requires more than protection; it demands partnership, equity, and the courage to lead together. When Indigenous wisdom meets modern science, and when Latino voices shape solutions grounded in justice, belonging, and shared stewardship, we move closer to a future where no community stands alone in the face of disaster.

May this work ignite a collective commitment to act, with empathy, accountability, and vision, to protect our families, restore our lands, and ensure that the next generation inherits a safer, more just, and more hopeful world for all.

APPENDIX A. TECHNICAL OVERVIEW: WILDFIRE DYNAMICS AND CLIMATE CHANGE

This appendix provides a technical overview of wildfire behavior and its connection to climate change, offering the scientific context that underpins the equity and policy discussions in the main body of the paper.

CHARACTERISTICS OF WILDFIRES

Before exploring the social and policy dimensions of wildfires, it is important to understand how they work, and how climate change has intensified their behavior.

Early evidence of controlled fire for warmth and cooking appeared between 400,000 and 300,000 years ago, making it a critical component of human evolution (Scott, 2018). Historically, humans evolved with fire; however, the removal and erasure of Indigenous peoples, shifting priorities toward timber production, aggressive fire-suppression policies, industrialization, and urban expansion have created conditions where wildfires ignite and spread faster than society can adapt.

Three elements must be present for a fire to occur: fuel, oxygen, and heat. An ignition source, such as sparks from faulty wiring or open flames, raises temperatures to the ignition point, causing combustion. Combustible materials like wood, paper, or gas act as fuel that feeds the fire, while oxygen sustains the chemical process of burning. This is known as the fire triangle. When fuel burns, it reacts with oxygen from the surrounding air, releasing heat and producing gases, smoke, and embers.

For fire to continue burning, heat transfers through radiation, convection, and conduction.

- *Radiation* sends heat energy through electromagnetic waves, pre-heating nearby fuels.
- *Convection* moves heat upward through rising hot air and smoke, rapidly spreading flames.
- *Conduction* transfers heat molecule-to-molecule, determining how quickly a fire grows and intensifies.

Complementing this is the fire-behavior triangle, consisting of fuels, topography, and weather.

Fuels include dead plant material, structures, fences, and debris. As described by the National Park Service (2017), fuel characteristics, loading, arrangement, moisture, and chemical content, determine flammability. Fuel loading is particularly critical, influencing the speed, intensity, and duration of a fire.

Learn more: “The 1910 Fires - A Turning Point in U.S. Forest Policy.”



Unlike weather or topography, **fuel loading is the only element that can be actively managed**. Decades of suppression without preventive burning, such as the U.S. Forest Service’s historic “10 a.m. policy,” have allowed fuels and debris to accumulate, dramatically increasing the risk and intensity of large-scale fires (Kreider et al., 2024).

Fuel moisture, the water content in living and dead vegetation, is the key factor determining ignitability. Seasonal rain, snow, and soil moisture influence this balance: wetter years promote biomass growth that later becomes fuel, while drier years make that fuel far more flammable (Alizadeh et al., 2024).

Weather conditions also drive fire behavior. Wind supplies oxygen and pushes flames toward new fuels, while low humidity dries vegetation and accelerates ignition.

At the intersection of fuel, heat, and wind lies the Wildland-Urban Interface (WUI), areas where homes meet wildlands. Embers, small burning fragments of wood or vegetation, pose the greatest threat; they can travel miles and ignite roofs, gutters, or decks. Research shows that **about 90 percent of homes destroyed in wildfires ignite from embers rather than direct flames**. A home’s vulnerability depends on the condition of the Home Ignition Zone (HIZ), everything within roughly 200 feet of the structure. Keeping this zone free of dry leaves, wood piles, and flammable debris significantly reduces the risk of structure loss.

CLIMATE CHANGE

Climate change is an interconnected issue that affects every aspect of life, public health, food and water security, and economic and environmental stability. While the topic is often politicized, its impacts are universal. Understanding how climate change works is essential for recognizing its direct connection to the growing frequency and intensity of wildfires.

Earth's atmosphere is composed primarily of nitrogen (N_2) and oxygen (O_2), with smaller amounts of other gases such as carbon dioxide (CO_2), water vapor (H_2O), methane (CH_4), nitrous oxide (N_2O), and argon (Ar). These are known as greenhouse gases because they trap heat radiated from Earth's surface.

Sunlight enters the atmosphere and reaches Earth's surface. Some sunlight is reflected back into space by clouds, while the rest is absorbed by the surface and lower atmosphere. Earth's surface then emits heat as

infrared radiation (IR), a form of electromagnetic energy. Greenhouse gases absorb this heat and radiate it back toward Earth's surface, creating the **greenhouse effect**. This natural process is necessary to maintain a temperature range that supports life.

However, since the start of the **Industrial Revolution** in the 1800s, human activities such as the burning of fossil fuels and deforestation have sharply increased the concentration of greenhouse gases, particularly carbon dioxide and methane, in the atmosphere. These elevated concentrations trap more heat, causing global warming and climate change (National Aeronautics and Space Administration, 2024).

Climate change refers to long-term shifts in temperature, precipitation, and weather patterns over decades or longer. The largest contributor to modern climate change is the burning of fossil fuels for energy.

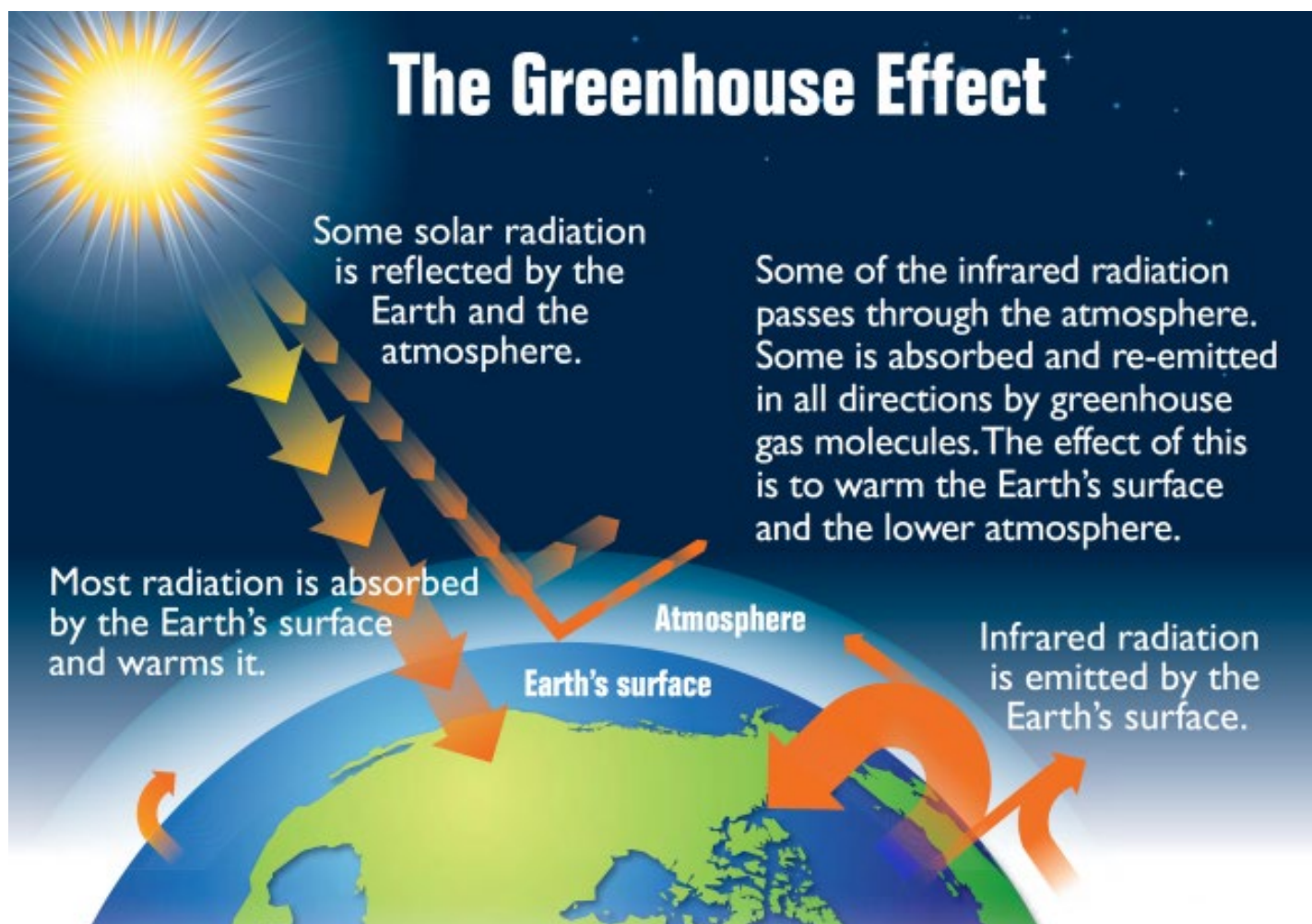


Image from: The United States Environmental Protection Agency

- Electricity and heat production remain dominated by coal, oil, and gas.
- Industrial processes such as cement, iron, and steel production release large quantities of CO₂.
- Mining and manufacturing machinery emit additional pollutants and greenhouse gases.
- Deforestation: the clearing of trees for agriculture or development, releases stored carbon and reduces Earth's capacity to absorb CO₂.
- Agriculture contributes through soil carbon loss and methane emissions from livestock digestion.
- Transportation accounts for roughly one-quarter of global CO₂ emissions, as most vehicles still rely on fossil fuels.
- Buildings (residential and commercial) emit substantial greenhouse gases from heating, cooling, and energy use, especially as rising temperatures increase demand for air conditioning.

Together, these drivers have raised global average temperatures, disrupted precipitation patterns, and created hotter, drier, and windier conditions, key ingredients for extreme wildfire behavior.

(National Aeronautics and Space Administration, 2024; U.S. Environmental Protection Agency, 2023)



EXTREME WEATHER EVENTS AND WILDFIRE BEHAVIOR

Climate change is increasing the frequency, intensity, and severity of extreme weather events, including wildfires. **Global average air temperatures have increased by about 2°F (1.1°C) over the past 100 years**, and the number of extreme wildfires has more than doubled. Rising global temperatures disrupt weather patterns, producing hotter, drier conditions that desiccate vegetation, trees, shrubs, grasses, and forest debris, transforming entire landscapes into highly flammable fuel **(Center for Climate and Energy Solutions, 2025)**.

Hotter temperatures also lead to prolonged and severe droughts, extended periods of below-average precipitation that reduce surface water, dry out soil, and weaken vegetation. When forests and soils lose moisture, they release stored carbon and particulate matter, a mixture of microscopic solid and liquid particles suspended in the air. These emissions further contribute to global warming. **Drier conditions, combined with stronger winds, allow fires to spread faster, farther, and more intensely.**



Example: High winds along Colorado’s Front Range on **December 30, 2021**, tore through two towns, causing **1,084 homes to burn in less than three hours**.

Warmer conditions also cause earlier **snowmelt**, shorter winters, and increased **lightning**, all of which create ideal conditions for fires to ignite and spread rapidly. Reduced snowpack and shorter winters strain regions reliant on snowmelt for water supply, such as California’s Sierra Nevada. The ripple effects extend beyond wildfires, impacting water availability, agriculture, transportation, energy systems, and public health.

On a global scale, **wildfire smoke alters atmospheric circulation** by scattering sunlight, changing wind patterns, and even disrupting rainfall. Together, these dynamics show how climate change and wildfires reinforce each other, intensifying the destructiveness of extreme weather.

As climate change reshapes wildfire behavior worldwide, its impacts fall disproportionately on vulnerable populations, including **Latino communities**. Fire seasons in **East Africa, Mexico, Brazil, and the western United States** are now more than a month longer than they were 35 years ago (**NASA, 2025**). Historically, wildfire season in the western U.S. lasted from spring through fall, but in the past decade, it has expanded significantly.



In the last decade, many regions have seen the season stretch from May through November, with Southern California even experiencing wildfires in January 2025. Extreme fire activity has also increased in temperate forests of the western U.S. and in boreal regions across northern North America and Russia (NASA, 2025; NOAA, 2023).

Wildfires can also influence local and regional weather patterns. Intense heat from large fires forces air to rise rapidly, forming pyrocumulus clouds that can evolve into thunderstorms. These fire-driven storms generate strong winds that carry embers miles away, heavy rainfall that leads to flooding or landslides, and lightning, a major ignition source. Burned soils stripped of vegetation lose their ability to retain water and absorb heat, worsening drought and raising local temperatures. While some view fire-generated storms as a form of relief, they often bring prolonged heat and wind, creating even drier, fire-prone conditions once the moisture evaporates.

Wildfires also release large quantities of greenhouse gases and particulate matter, fueling additional climate change and forming a dangerous **feedback loop**: climate change increases wildfire risk, and wildfires in turn intensify climate change, making extreme events more destructive and more difficult to manage.

APPENDIX B. CASE STUDY: THE JANUARY 2025 SOUTHERN CALIFORNIA WILDFIRES

Wildfires cannot be predicted by when or where they will happen, but by the actions taken to slow down the warming of the planet and address climate change. During the Southern California fires on January 7, 2025 many people pointed to Mike Davis, as a person who foresaw the Palisades wildfires. In his book *Ecology of Fear: Los Angeles and the Imagination of Disaster* (1998), Davis recounted a blaze in Malibu, California in 1930, accidentally started by walnut pickers near Thousand Oaks that rapidly escalated into one of Malibu's worst fires in history. Malibu's geographical characteristics such as the notorious Santa Ana winds, and climate contributed to making the region a highly prone fire area.

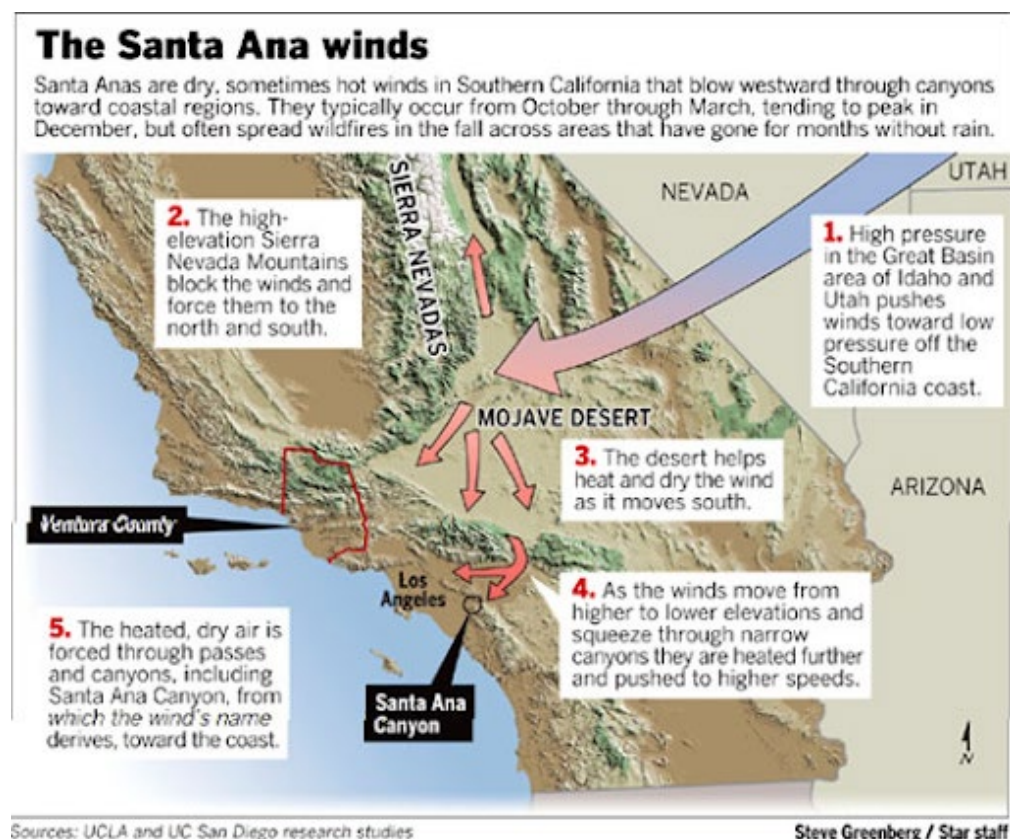


Image from Ventura County Star

The wildfires of January 7, 2025 in Southern California were the consequences of decades of urban development that amplifies natural hazards and reactivates dormant hazards and creates new hazards (Davis, 1988, p.8). John Abatzoglou, a fire and climate expert from the Department of Management of Complex Systems at University of California, pointed to a trifecta of factors that created the conditions for the extreme wildfire in Palisades and surrounding areas: extra vegetation from two wet years poor land management, a historically dry fall and the phenomenon of the Santa Ana winds.

Like Southern California, places across the U.S. prone to wildfires have unique environmental conditions that are worsened by weak government action, unchecked fossil fuel use and climate denial. These conditions create the perfect formula for wildfires and other natural disasters to occur.

CASE STUDY: WILDFIRE DEVASTATION IN MAUI, HAWAII

Lahaina, Maui illustrates the extreme impact wildfires can have on communities dependent on tourism and hospitality. Once the capital of the Kingdom of Hawai'i, Lahaina had an abundance of running water and lush vegetation managed communally through traditional indigenous practices (Kamehameha Schools, n.d)(Harvard Law Review, 2024). It was celebrated for its historic culture, scenic beauty and local charm. However, in 2023 Lahaina became the site of the deadliest wildfire in the U.S. in over a century, claiming 102 lives and destroying 2,200 homes, apartments, and structures. Tourism, which accounted for 51 percentage of resident employment, collapsed; visitor spending dropped nearly three-quarters, translating to over \$13 million in lost revenue per day (Holliday et al., 2024). Approximately 5,089 residents lived in unsafe homes, and at least 430–510 relocated out of state, reducing the local population and long-term economic recovery (University of Hawai'i, 2025; Moore & Karacaovali, 2025).

The Maui fire underscores the vulnerability of towns reliant on tourism, hospitality, and recreation, highlighting the disproportionate impacts of wildfires on employment, housing, and community stability. Mismanagement of landscapes and climate-related threats, such as rising temperatures, extreme weather, and sea-level rise, further heighten the risk. Preserving communities and landscapes requires stronger wildfire management, environmental stewardship, and policies addressing the needs of vulnerable populations, particularly Latinos who are often disproportionately affected.

CASE STUDY: INDIGENOUS WATER AND FIRE STEWARDSHIP IN LAHAINA, HAWAII

The Lahaina case study illustrates how Indigenous management practices can mitigate wildfire impacts. With colonial settlement, water resources were diverted and mismanaged for private agriculture, drying the land and reducing natural resilience. A central issue was the restriction of Native Hawaiians' ability to practice the ahupua'a system, a sophisticated watershed-management model that maintains water flow from mountain to sea, supporting lo'i kalo (taro fields), loko i'a (fishponds), and healthy ecosystems.

The loss of these practices contributed to conditions that heightened fire intensity and destruction during recent wildfires. Today, efforts to rebuild Lahaina involve collaboration among cultural practitioners, farmers, and conservation groups to restore elements of the ahupua'a system. By reintroducing native vegetation and traditional agricultural methods, these initiatives aim to re-establish ecological balance, reduce fire risk, and strengthen community resilience (Kealoha, 2025).

CASE STUDY: INDIGENOUS KARUK TRIBE

The Karuk Tribe of the Klamath River historically managed their lands with frequent cultural burnings, practices that promoted forest health, biodiversity, and created essential resources. These fires created healthy forests, allowing trees to age differently, maintaining open spaces, and protecting the land from high-severity wildfires. However, U.S. federal policies increasingly suppressed these practices. The 1850 Act for the Government and Protection of Indians outlawed Karuk burning, criminalizing ancestral traditions. Post-World War II advancements in firefighting further prevented fire from naturally maintaining the landscape. The long-term result was dense, overgrown forests with elevated fuel loads, reduced biodiversity, and diminished resources for the Karuk people. Without their traditional burns, native conifers encroached on other species, degrading the ecological balance the Tribe had maintained for generations.

These conditions, combined with climate-driven factors such as prolonged droughts and extreme heat, set the stage for high-severity wildfires like the 2020 Slater Fire. Today, the Karuk continue to use cultural burns, demonstrating the importance of Indigenous fire stewardship in maintaining resilient, healthy forests and mitigating the extreme wildfire risks now increasingly common in California and beyond (Williams, 2025).



REFERENCES

- Abatzoglou, J. T. (2025). Southern California wildfire analysis briefing. University of California, Merced, Department of Management of Complex Systems.
- Alizadeh, M., et al. (2024). Fuel moisture variability and wildfire risk in North American forests. *Environmental Research Letters*, 19(1), 015012. <https://doi.org/10.1088/1748-9326/ad19a11>
- American Psychological Association. (2024). *Climate Change and Mental Health: Addressing the Growing Threat*. Washington, DC: APA. <https://www.apa.org>
- Australian Museum. (n.d.). Cultural burning and caring for Country. <https://australian.museum/learn/first-nations/cultural-burning/>
- Borunda, A. (2024, June 27). Air pollution kills millions each year, and the threat is growing. *National Geographic*. <https://www.national-geographic.com>
- Brownstein, A. L. (2024). Long-term air pollution exposure and mood disorders: Emerging evidence from wildfire-prone regions. *Journal of Environmental Psychology*, 92, 102160. <https://doi.org/10.1016/j.jenvp.2024.102160>
- Bullard, R. D. (2000). *Dumping in Dixie: Race, Class, and Environmental Quality* (3rd ed.). Boulder, CO: Westview Press.
- California Legislature. (2019). Senate Bill 310 – Tribal Sovereignty Over Cultural Burning. <https://legiscan.com/CA/text/SB310/id/3023398>
- Center for Climate and Energy Solutions. (2025). Wildfire and Climate Change: What You Need to Know. <https://www.czes.org>
- Chen, Y., Zhao, W., & Liu, X. (2022). Growth of the wildland–urban interface in the United States, 1985–2020. *Journal of Environmental Management*, 314, 115127. <https://doi.org/10.1016/j.jenvman.2022.115127>
- Danford, E. (2025, February 10). Wildfire disasters and hospital system vulnerability in the western U.S. *Health Affairs Blog*. <https://www.healthaffairs.org>
- Davis, M. (1998). *Ecology of Fear: Los Angeles and the Imagination of Disaster*. New York, NY: Metropolitan Books.
- Fang, J., Zhou, L., & Li, S. (2020). Maternal exposure to air pollution and adverse birth outcomes: A meta-analysis of PM_{2.5} effects. *Environmental Research*, 185, 109471. <https://doi.org/10.1016/j.envres.2020.109471>
- Fortin, J., & Hassan, A. (2024, August 18). Maui fire is the deadliest in modern U.S. history. *The New York Times*. <https://www.nytimes.com>
- Harvard Law Review. (2024). Indigenous resource rights and the reconstruction of Lahaina. *Harvard Law Review*, 137(4), 1152–1176.
- Headwaters Economics. (2020). *Wildfire Impacts on Communities and Economies: A Decade of Destruction*. Bozeman, MT: Headwaters Economics. <https://headwaterseconomics.org>
- Headwaters Economics. (2024). *Wildfire Risk to Communities Database* [Data set]. <https://wildfirerisk.org>
- Health Effects Institute. (2024). *State of Global Air 2024*. Boston, MA: Author. <https://www.stateofglobalair.org>
- Hennighausen, A., & James, K. (2024). *Internal Displacement in the United States: 2020–2023 Wildfire and Disaster Trends*. Geneva: Internal Displacement Monitoring Centre. <https://www.internal-displacement.org>

REFERENCES

- Hirji, Z. (2024, September 12). Wildfire smoke's hidden toll: \$36 billion a year in U.S. health costs. Bloomberg Green. <https://www.bloomberg.com>
- Hispanic Access Foundation. (2024). Latino Attitudes toward Conservation and Public Lands Survey, 2024. Washington, DC: Author. <https://hispanicaccess.org>
- Hoffman, J. S., Shandas, V., & Pendleton, N. (2020). The effects of historical housing policies on contemporary urban heat exposure. *Climate*, 8(1), 12. <https://doi.org/10.3390/cli8010012>
- Holliday, R., Tanaka, L., & Kimura, J. (2024). Tourism recovery and community displacement after the 2023 Maui wildfires. *Hawai'i Economic Policy Review*, 16(2), 97–118.
- Jiao, W., Chen, W., & Li, H. (2025). Socioeconomic and racial vulnerability to wildfires in the United States. *Environmental Research Letters*, 20(3), 035001. <https://doi.org/10.1088/1748-9326/ad18e7>
- Just Solutions Collective. (2024). Smoke, Heat, and Equity: How Climate Disasters Disproportionately Impact Communities of Color. <https://justsolutionscollective.org>
- Kamehameha Schools. (n.d.). Traditional water management and the ahupua'a system. <https://www.ksbe.edu/aina/natural-and-cultural-ecosystems>
- Kealoha, P. (2025). Restoring the ahupua'a: Indigenous Water Stewardship and Wildfire Resilience in Lahaina, Hawai'i. *Pacific Conservation Review*, 12(1), 41–54.
- Kreider, T., et al. (2024). Fuel accumulation and fire suppression in U.S. forests: Implications for wildfire management. *Forest Ecology and Management*, 546, 120–138. <https://doi.org/10.1016/j.foreco.2024.120138>
- Lake, F. K., & Christianson, A. (2019). Indigenous fire stewardship: Lessons for forest resilience and climate adaptation. *Ecological Applications*, 29(8), e01975. <https://doi.org/10.1002/eap.1975>
- Li, Q., & Yu, S. (2025). Economic assessment of wildfire damages: Evidence from Los Angeles County. *Journal of Economic Geography*, 25(2), 189–206.
- Mohai, P., Pellow, D., & Roberts, J. T. (2019). Environmental justice. *Annual Review of Environment and Resources*, 34, 405–430. <https://doi.org/10.1146/annurev-environ-082508-094348>
- Moore, A., & Karacaovali, B. (2025). Economic Impact and Recovery Trajectory of the Lahaina Wildfires. University of Hawai'i Economic Research Organization Working Paper.
- Motairek, I., Nguyen, J., & Jones, M. (2022). Redlined neighborhoods and public health disparities. *Journal of Urban Health*, 99(4), 532–547. <https://doi.org/10.1007/s11524-022-00640-5>
- National Aeronautics and Space Administration. (2024). Climate change and Earth system indicators. NASA Climate Portal. <https://climate.nasa.gov>
- National Interagency Coordination Center. (2023). National Incident Management Situation Report 2023. Boise, ID: U.S. Department of the Interior. <https://www.nifc.gov>
- National Interagency Fire Center. (2024). Wildland Firefighter Fatalities by Year and Cause, 2014–2024 [Data set]. Boise, ID: U.S. Department of the Interior. <https://www.nifc.gov>

REFERENCES

- National Institutes of Health. (2024). Climate Change and Mental Health: Current Evidence and Research Needs. Bethesda, MD: NIH Office of Behavioral and Social Sciences Research. <https://obssr.od.nih.gov>
- National Oceanic and Atmospheric Administration. (2023). Global Climate Report 2023. NOAA National Centers for Environmental Information. <https://www.ncei.noaa.gov>
- National Park Service. (2017). Wildland Fire Behavior. U.S. Department of the Interior. <https://www.nps.gov/articles/wildland-fire-behavior.htm>
- Nelson, R. K., Winling, L., Marciano, R., & Connolly, N. (2023). Mapping Inequality: Redlining in New Deal America [Digital archive]. University of Richmond Digital Scholarship Lab. <https://dsl.richmond.edu/panorama/redlining>
- Pérez, M. (2024). Latinos in Low-Wage and Informal Labor: Workforce Inequities in the Service Economy. Los Angeles, CA: UCLA Labor Center.
- Scott, A. C. (2018). Fire on Earth: An Introduction to Fire Ecology. Oxford University Press.
- Texas A&M Forest Service. (n.d.). Home Hardening for Wildfire Prevention / Prepare-for-Wildfires Homeowner Guidance. <https://tfsweb.tamu.edu/wildfire-and-other-disasters/homeowners-prevention-and-preparedness/>
- U.S. Bureau of Labor Statistics. (2023). Labor force characteristics by race and ethnicity, 2023. U.S. Department of Labor. <https://www.bls.gov>
- U.S. Department of Agriculture, Forest Service. (2024). Community Wildfire Defense Grant Program Overview. <https://www.fs.usda.gov/managing-land/fire/grants/cwdg>
- U.S. Department of Health and Human Services, Office of Minority Health. (2024). Cardiovascular Disease and Diabetes Among Hispanic Populations: Disparities Report 2024. Washington, DC: OMH. <https://minorityhealth.hhs.gov>
- U.S. Environmental Protection Agency. (2023). Wildfire Smoke: A Guide for Public Health Officials (Rev. ed., EPA/600/R-23/011). <https://www.epa.gov/air-research>
- U.S. Fire Administration. (2025). Community Wildfire Protection Planning Toolkit. <https://www.usfa.fema.gov>
- U.S. Forest Service. (2023). Prescribed fire and community resilience fact sheet. <https://www.fs.usda.gov>
- U.S. Forest Service. (2023). Wildfire statistics and burned acreage on National Forests and Grasslands, FY 2023. <https://www.fs.usda.gov>
- University of Hawai'i. (2025). Maui Wildfire Recovery and Population Displacement Survey 2024–2025. Honolulu, HI: Department of Urban and Regional Planning.
- University of Notre Dame. (2011). Latino Labor in Outdoor Industries Report. South Bend, IN: Notre Dame Center for Social Concerns.
- Wildfire Risk to Communities. (2024). Insurance and Recovery Challenges for Wildfire-Affected Households. U.S. Department of Agriculture, Forest Service. <https://wildfirerisk.org>
- Wildland Fire Learning Network. (2024). Prescribed Burn Associations: Collaborative Fire Management in Practice. Arlington, VA: The Nature Conservancy. <https://www.conservationgateway.org>

REFERENCES

Williams, S. (2025). Cultural fire and forest restoration: The Karuk Tribe's path to resilience. *California Forestry Journal*, 178(1), 45–58.

Williamson, K. E. (2023). Prenatal exposure to wildfire smoke and birth outcomes in California. *Environmental Health Perspectives*, 131(2), 027004. <https://doi.org/10.1289/EHP12046>

Wolfe, R., et al. (2020). *The State of Domestic Work in the United States 2020*. New York, NY: National Domestic Workers Alliance. <https://domesticworkers.org>

ABOUT HISPANIC ACCESS FOUNDATION

Hispanic Access Foundation is a 501(c)(3) non-profit organization that connects Latinos with partners and opportunities improving lives and creating an equitable society. Our vision is that all Hispanics throughout the U.S. enjoy good physical health, a healthy natural environment, a quality education, economic success and civic engagement in their communities with the sum improving the future of America. For more information, visit www.hispanicaccess.org.

Hispanic Access Foundation was actively involved in elevating the Latino community's voice around the Browns Canyon, San Gabriel Mountains, Boulder-White Clouds, Sand to Snow, Mojave Trails, and Castle Mountains National Monument efforts. Additionally, Hispanic Access Foundation has launched the initiatives Por la Creación Faith-based Alliance, which unites Latino faith leaders around the protection of God's creation and creating tomorrow's environmental stewards, and Latino Conservation Week, which includes more than 150 conservation and outdoor-related events across the country.



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