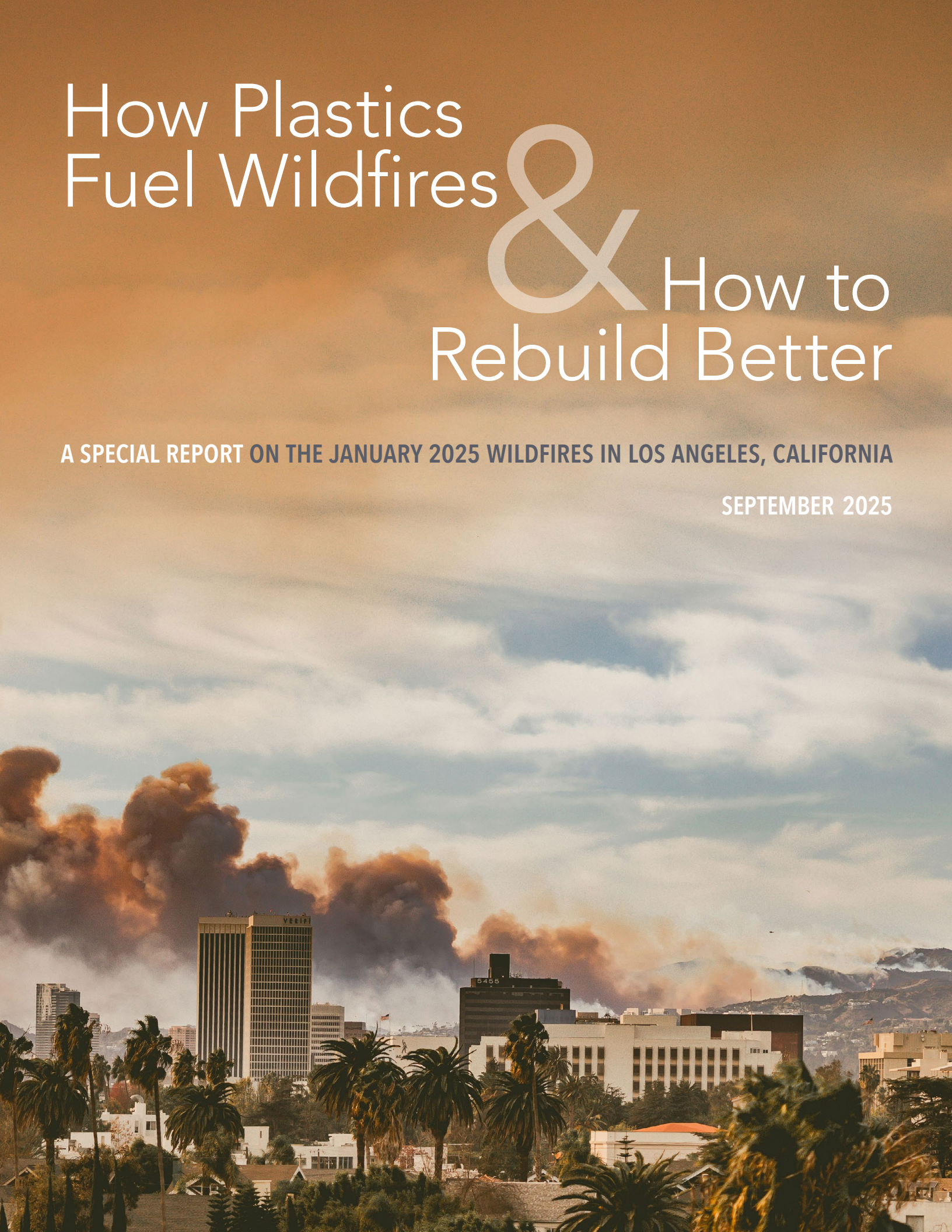
How Plastics Fuel Wildfires & How to Rebuild Better

A SPECIAL REPORT ON THE JANUARY 2025 WILDFIRES IN LOS ANGELES, CALIFORNIA

SEPTEMBER 2025



About Plastic Pollution Coalition

Plastic Pollution Coalition is a non-profit communications and advocacy organization that collaborates with an expansive global alliance of organizations, businesses, and individuals to create a more just, equitable, regenerative world free of plastic pollution and its toxic impacts. Plastic Pollution Coalition is a project of Earth Island Institute.

About Habitable

Habitable (formerly Healthy Building Network) believes that all people and the planet will thrive when the materials economy is in balance with nature. Habitable's team of researchers activate science to reduce pollution, mitigate climate change, and create a healthier and more equitable future for all. Habitable's Informed™ initiative supports built environment practitioners in selecting products with safer chemicals to improve the health of humans and the environment.

Thank you to Ann Blake, Ph.D., Founder of Building Regenerative Economies, and Scientific Advisor for Plastic Pollution Coalition, for reviewing this report.

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Introduction

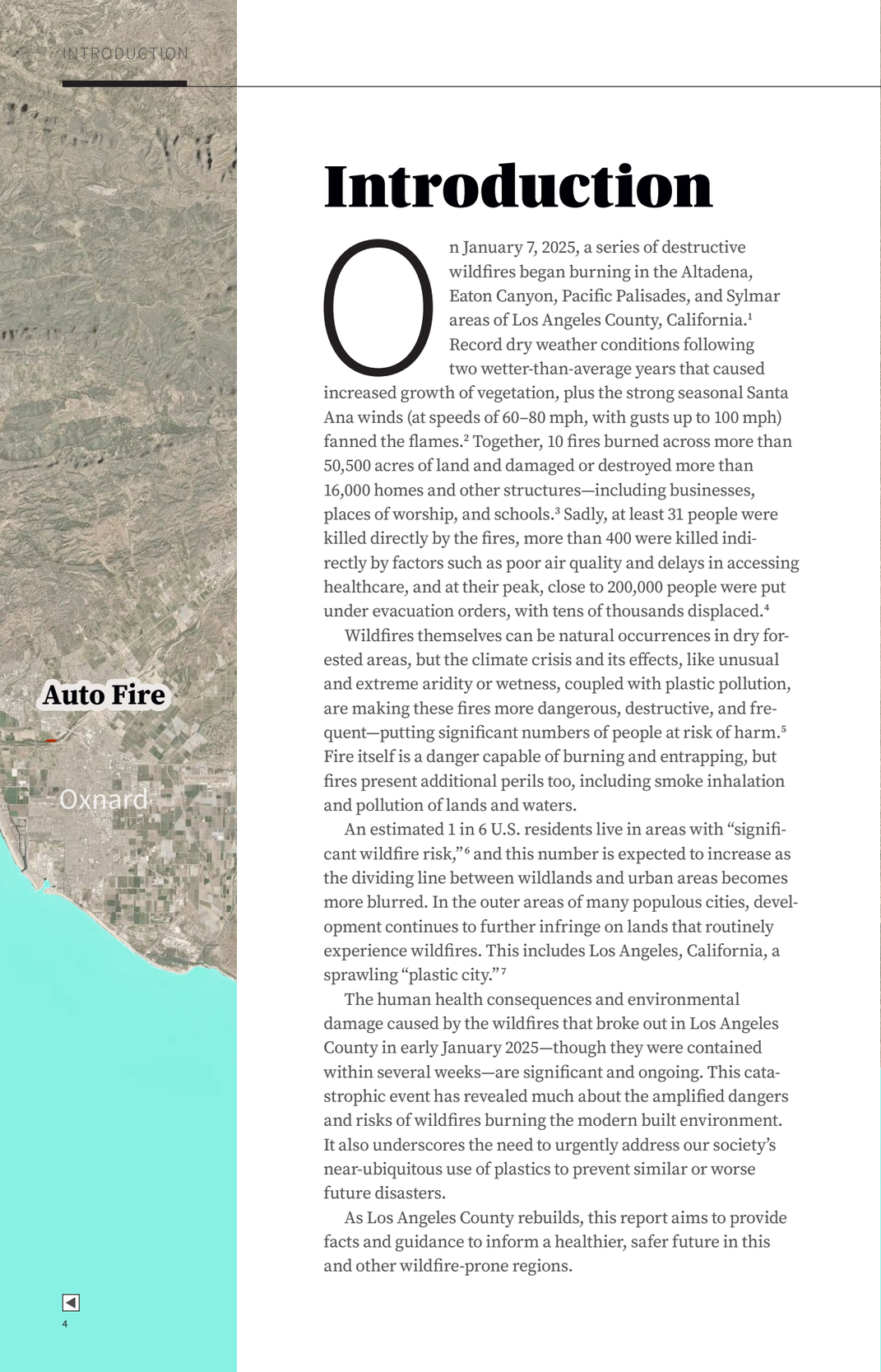
On January 7, 2025, a series of destructive wildfires began burning in the Altadena, Eaton Canyon, Pacific Palisades, and Sylmar areas of Los Angeles County, California.[1] Record dry weather conditions following two wetter-than-average years that caused increased growth of vegetation, plus the strong seasonal Santa Ana winds (at speeds of 60–80 mph, with gusts up to 100 mph) fanned the flames.[2] Together, 10 fires burned across more than 50,500 acres of land and damaged or destroyed more than 16,000 homes and other structures—including businesses, places of worship, and schools.[3] Sadly, at least 31 people were killed directly by the fires, more than 400 were killed indirectly by factors such as poor air quality and delays in accessing healthcare, and at their peak, close to 200,000 people were put under evacuation orders, with tens of thousands displaced.[4]

Wildfires themselves can be natural occurrences in dry forested areas, but the climate crisis and its effects, like unusual and extreme aridity or wetness, coupled with plastic pollution, are making these fires more dangerous, destructive, and frequent—putting significant numbers of people at risk of harm.[5] Fire itself is a danger capable of burning and entrapping, but fires present additional perils too, including smoke inhalation and pollution of lands and waters.

An estimated 1 in 6 U.S. residents live in areas with "significant wildfire risk,"[6] and this number is expected to increase as the dividing line between wildlands and urban areas becomes more blurred. In the outer areas of many populous cities, development continues to further infringe on lands that routinely experience wildfires. This includes Los Angeles, California, a sprawling "plastic city."[7]

The human health consequences and environmental damage caused by the wildfires that broke out in Los Angeles County in early January 2025—though they were contained within several weeks—are significant and ongoing. This catastrophic event has revealed much about the amplified dangers and risks of wildfires burning the modern built environment. It also underscores the need to urgently address our society's near-ubiquitous use of plastics to prevent similar or worse future disasters.

As Los Angeles County rebuilds, this report aims to provide facts and guidance to inform a healthier, safer future in this and other wildfire-prone regions.



Palisades Fire burns a large home during the January 2025 wildfires in Los Angeles County

Part I:

The January 2025 Wildfires in Los Angeles, California

Wildfire smoke typically contains a mixture of gases, water vapor, particle pollution, and toxic compounds known as hazardous air pollutants.[8] Hazardous air pollutants are toxic and known or suspected to cause cancer or other serious health effects, including birth defects and fertility and reproductive problems. Breathing in wildfire smoke can cause immediate health issues, including asthma attacks, chest pain, coughing, difficulty breathing, fatigue, headaches, itchy throat, irritation in sinuses, rapid heartbeat, runny nose, stinging eyes, and wheezing.[9]

While some hazardous air pollutants are created when natural materials, such as wood from trees or vegetation, are burned, many come from the burning of plastic from buildings and motor vehicles.[10] Today, most modern buildings, homes, and furniture are made primarily from plastics. Very common are plastic appliances, plastic foam mattresses, chairs, and couches covered in plastic fabric; plastic rugs, and other furnishings. Plastic flooring, paints, polyvinyl chloride (PVC) pipes, roofing, siding, and other building materials are widely used. Both personal and public vehicles are largely made of plastics, as are synthetic lawns and decking, patio furniture, pools, sheds, and other outdoor items like tools and equipment. The result is a landscape largely covered with plastic.

Wildfire Smoke and Microplastics Reduce Air Quality

When wildfires burn through densely built-up urban and suburban areas, large amounts of plastics are open-burned, releasing some of the most toxic chemicals into already dangerous wildfire smoke. Plastics contain any mixture of more than 16,000 chemicals, at least 4,200 of which are already known to be toxic to people and the environment. Many of these chemicals are known endocrine disruptors, meaning they interfere with the body's normal hormone function and can cause serious health problems, especially in children and pregnant people.[11]

What's more, plastic containers holding cleaning agents, gasoline, pesticides, and other dangerous substances contribute even more toxic substances into the air, and can further fuel fires. Research has shown that microplastics are also released into the air when plastics are burned, along with wildfire ash and other particulate pollution.[12] The release of microplastics from wildfires adds to the already

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Some of the Most Dangerous Chemicals Plastics Release When Burned [13]

Bisphenols
linked to cancer; developmental, learning, and behavior issues; heart disease; infertility and reproductive problems; and metabolic disorders like diabetes and obesity [14]

Dioxins
linked to cancer, developmental problems, liver and other organ damage, and skin irritation [15]

Furans
linked to birth defects, cancer, immune system disease, organ damage, and neurological problems [16]

Heavy metals
linked to heart problems, respiratory difficulties, and damage to the kidneys and other organs and bones [17]

Nitrogen dioxide and other nitrogen oxides
reactive compounds that can form fine particulate pollution that embeds itself deep in the lungs, causing severe respiratory diseases like emphysema and bronchitis; can aggravate pre-existing heart problems, leading to early death [18]

Phthalates
endocrine-disrupting chemicals (EDCs) linked to cancer, early puberty, heart and respiratory problems, immune system diseases, infertility and poor birth outcomes, metabolic problems, neurological and behavioral problems [19]

Polyaromatic hydrocarbons (PAHs), such as benzo(a)pyrene
linked to cancer, and can cause respiratory and skin irritation [20]

Sulfur dioxide
severe irritant to eyes, nose, respiratory tract, skin, and throat [21]

Volatile organic chemicals (VOCs), such as benzene
linked to cancer; irritation of eyes, nose, throat; and damage to the liver, kidneys, and central nervous system [22]

significant and growing amount of microplastics that are continuously released into the air as they shed off plastic items as particles and travel through the environment. People inhale airborne plastic particles, and these contribute to our bodies' growing plastic burden. Microplastics in the air have been linked to a variety of serious health problems, including male and female infertility, colon cancer, poor lung function, and chronic pulmonary inflammation linked to increased risk of lung cancer.[23]

People at the greatest risk of experiencing adverse health effects from wildfire smoke include pregnant people and their fetuses, as well as people with chronic health conditions, such as asthma, Chronic Obstructive Pulmonary Disease (COPD), diabetes, and heart or kidney disease.[24] Responders such as firefighters are also at greater risk of harm due to close and prolonged smoke exposure.[25] Robert Burke, Hazardous Materials and Fire Protection Consultant, told Firehouse Magazine, "The greatest concern for emergency responders, and particularly firefighters, is the burning of plastics."[26] Children, whose developing lungs are most sensitive to breathing in particulate matter in the air, are at high risk of being harmed by toxic wildfire smoke.[27]

During and after wildfires, officials often recommend that people living in areas affected by smoke check their local air quality reports to best determine what precautions to take. The U.S. Government's AirNow Air Quality Index (AQI) measures particulate matter (PM) and shows local levels of PM 10—larger particles with a diameter of 10 micrometers or less—and PM 2.5—tiny particles with a diameter of less than 2.5 micrometers, which are the most dangerous because their small size allows them to penetrate deeper into the lungs. Air is considered "unhealthy" when fine air particles exceed 55 micrograms per cubic meter of air, or an AQI of 150 or above.[28]

When air quality is poor, it's recommended that people—especially those in the groups most vulnerable to the harmful effects of

"The greatest concern for emergency responders, and particularly firefighters, is the burning of plastics."

— Robert Burke, *Hazardous Materials and Fire Protection Consultant*

smoke inhalation—stay indoors, and that individuals take precautions such as wearing properly fitting N-95 masks and considering eyewear outdoors.

However, wildfire smoke can travel for hundreds or even thousands of miles, reducing air quality near and far away from burning fires.[29] Research suggests that hazardous wildfire smoke has entered the homes of more than a billion people each year over the last two decades as wildfires become more destructive and frequent.[30]

Home air quality monitors may or may not check for other sources of air pollution in addition to ozone and PM, including volatile organic chemicals (VOCs), radon, and carbon monoxide—making them an imperfect tool to understand the full range of air pollutants present indoors. Wildfire smoke can get into homes, even when windows and doors are kept closed.

While standard air quality measurements can be a useful way for some people to understand the levels of ozone and PM in local air, they do not indicate risks of the full range of wildfire smoke pollutants. Ozone and PM are considered everyday pollutants, while the pollutants in wildfire smoke include complex mixtures of chemicals. Further, wildfire conditions and smoke cover can change rapidly, and there can be a lag in real-time air quality data.

Wildfire Smoke Protection Recommendations [31]

- Stay indoors as much as possible and keep all windows closed.
  - Seal gaps around windows and doors.
  - Use HEPA or DIY air filters whenever possible.[32]
  - Do not exercise or perform strenuous activities, which can draw polluted air deeper into your lungs.
- Consider wearing eyewear when outdoors (like safety goggles), gloves, and a change of clothes, including shoes.
  - It's recommended to take off all clothes and shoes worn outside before coming indoors.
- Experts recommend that adults wear a fitted N-95 mask when outdoors to properly filter particles in polluted air. Note that experts say facial hair can affect the way N-95 masks fit, potentially making them less effective.[33]
  - Check your local libraries and health centers for mask distribution.
  - Cloth masks are not recommended, since smoke particles collect in the material and are breathed in continuously.
  - Surgical masks are also not recommended, since their looser fit allows too much air to get in without being filtered.

- For children, because N-95 masks are not fitted to their smaller faces, it is important to keep young people indoors in sealed and filtered "clean rooms" when possible, and avoid bringing them outside during and after wildfires.[34]

Chemicals and Heat from Wildfires Threaten Drinking Water Quality

While many communities impacted by wildfires have faced drinking water contamination, it was only after California's super-destructive 2017 Tubbs Fire and 2018 Camp Fire that experts recognized that the toxicity of chemicals found in drinking water after wildfires can be "comparable to hazardous waste."[35] In areas with minimal damage, drinking water contamination after wildfires can last weeks to months; in harder hit areas, contamination can last for years.[36]

Wildfires and plastic pollution contaminate drinking water in compounding ways:

First, surface water supply can be contaminated by a toxic runoff mixture of ash and flame retardant used to suppress fires, as well as chemicals from burnt structures and plastic items.[37]

Plastic pipes also contaminate drinking water. Plastics—specifically PVC—are commonly used in many parts of the water system, including storage tanks, service lines that connect homes to water mains, and water meters.[38] When these plastic parts start to get hot, even at just 200–250°C (wildfires can reach 1200°C during extreme conditions), they break up and release VOCs into the water.[39]

For example, after the Tubbs and Camp Fires, drinking water chemical contamination was widespread in the water distribution network but not in the source water after the fire.[40] Later analysis confirmed that plastic pipes directly released toxic chemicals, including VOCs, into the water they carried.[41]

Once VOCs are released into the water supply, there is a long-term threat of contamination. This is because heat-damaged plastic can both leach and absorb toxic chemicals, creating the possibility of recontamination until—and even after—it seems that all chemicals have been flushed out.[42] This process can jeopardize water safety for months or years.[43]

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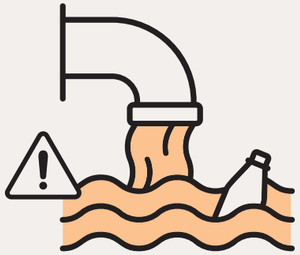
Contamination can also spread beyond directly impacted pipes due to depressurization. Depressurization often occurs during wildfires for several reasons. First, the extra demand needed from the water system to fight fires decreases pressure. Loss of power can also decrease water pressure. Decreased pressure and overall damage to the water system can cause contaminated water to be pulled into water mains, spreading toxic chemicals into otherwise unaffected parts of the water system.[44]

The potential for widespread contamination of drinking water poses serious health risks:

Benzene, a VOC and known human carcinogen, is one of the most common chemicals found in drinking water after wildfires.[45] It is released into drinking water from smoke and soot, as well as burned plastic—especially plastic pipes. Levels of benzene in the drinking water after the Tubbs and Camp Fires reached "8,000 times the federal drinking water limit and 200 times the level that causes immediate health effects," such as vomiting, dizziness, convulsions, and unconsciousness.[46] Beyond cancer, benzene can cause chronic illness such as blood disorders and reproductive problems. One pediatrician and epidemiologist stated that the levels found after the Camp Fire were "high enough to acutely give a child a blood disorder."[47]

Benzene isn't the only threat. Leading researchers warn that more than 100 toxic chemicals have been found in contaminated drinking water after wildfires.[48] All must be tested and accounted for to minimize the health risks to communities that have experienced fires. When contamination is detected, the first action most municipalities take is to issue a water advisory to households connected to public water. Unfortunately, contamination in private wells often needs to be monitored and addressed by private well owners, but local utilities and health departments may be able to help advise testing and treatment.[49]



More than 100 toxic chemicals have been found in contaminated drinking water after wildfires

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Water systems issue different types of advisories after crises contaminate drinking water supplies. Advisories are typically categorized as "Boil Water," "Do Not Drink," or "Do Not Use."[50]

A "Boil Water" advisory is issued when boiling water is able to kill the identified viruses and bacteria in contaminated water. Importantly, boiling or filtering water is unable to remove the chemicals released into drinking water after wildfires. An alert from the City of Pasadena, which issued a "Do Not Drink" water advisory after the Eaton Fire in January 2024, stated that "boiling, freezing, filtering, adding chlorine or other disinfectants, or letting water stand will not make the water safe to drink."[51]

Scientists are clear that only "Do Not Use" water advisories should be issued after wildfires potentially contaminate drinking water, and should not be lifted until comprehensive testing for the more than 100 possible VOCs and SVOCs (semi-volatile organic compounds) has routinely proven that water is safe.[52] Even in minimally impacted parts of the water system, it can require months of testing and flushing to ensure safe water.

Plastic Chemical-Laden Wildfire Ash Threatens Human and Environmental Health

Even after wildfires are extinguished, the widespread use of plastics in the built environment and all other aspects of our lives worsens the long-term damage of wildfires to the natural environment, including to Earth's soil, air, climate, oceans, and other water bodies.

Wildfire ash and chemical residues can persist in the environment long after fires and smoke have cleared. High winds, rain, and other weather events can re-expose individuals in areas affected by fire to pollutants. Toxic pollution from wildfires is made worse by plastic and can harm the health of people, the planet, plants, and wildlife for years or even decades.

Ashes from wildfires that burn across vegetated areas are usually helpful to the natural environment in the long term, returning nutrients like phosphorus and potassium to the soil that plants use to grow. However, wildfires that F burn buildings and infrastructure contribute toxic chemicals to ashes that fall on soils. Soil toxicity from plastic-laced ash—and, if used, firefighting foams or retardants—after wildfires harms everyone, but is acutely dangerous for farmers and people who grow their own food, livestock and pets who spend all or part of their time outdoors, and wild plants and animals. Children, pregnant individuals, seniors, and those with existing health conditions are also especially vulnerable to contact with contaminated soils and foods grown in contaminated soils.[53]

Following the January 2025 wildfires in Los Angeles, federal agencies removed debris and scraped topsoil in some fire-affected areas. However, they did not conduct soil sampling after these remediation efforts. Reporters from the *Los Angeles Times* conducted independent soil testing and found hazardous levels of heavy metals arsenic, lead, and mercury on several properties that had been visited by federal disaster crews, showing that contamination can exist long after fires and that remediation is difficult. Some sites had levels of toxicants exceeding residential safety standards by more than three times acceptable limits. Such contamination is especially dangerous for children, who are most vulnerable to the health risks of heavy metal exposure—which include cancer, kidney and respiratory damage, and neurological harm. Children are exposed when they inhale soil dust, as well as through dermal contact and ingestion of soils.[58]

F *January 10, 2025—Pacific Palisades, Calif.*

G

H *Toxic algae bloom*

Buildings today are typically made from significant amounts of plastics and other hazardous materials, including outdated hazardous materials like asbestos and lead paint, and are often filled with plastic household items like appliances, electronics, and furniture.[59] When plastics and other hazardous materials and substances like cleaning agents, pesticides, and petrochemicals are burned, many of the chemicals they contain—like heavy metals, flame retardants, PFAS, phthalates, and polycyclic aromatic hydrocarbons (PAHs)—are transferred into ash. These chemicals leach into soils, and can even contaminate groundwater supplies when it rains.[60]

Burning plastic also releases microplastics into the air and soils.[61] Microplastics, which both absorb toxic chemicals from the environment and leach any mix of plastic's more than 16,000 additives into the environment, along with toxic ash falling during and after fires, can cause long-term soil damage.[62] Microplastics cause profound and serious harm to soil health by changing soil structure and water dynamics and reducing nutrient availability.[63] Soil microbes are harmed by microplastics, and their loss reduces overall soil biodiversity and resilience. This can increase risk of soil pests and disease, and reduce plant growth by blocking plants' water-absorbing pores and interrupting their water and nutrient uptake.[64]

Soils are naturally less absorptive of water after wildfires in vegetated regions due to the loss of plant life and incorporation of ash into soils. Microplastics from burned plastics further decrease soil's natural absorptive properties by making soils more compact and less permeable. Less absorption of water in soils following wildfires increases runoff as well as erosion, flooding, and landslides, particularly during heavy rainfall. On the other hand, dry, windy conditions can increase airborne toxic ash and microplastics by lifting these contaminants from soils during and long after wildfires.[65] Experts say that even just walking through dusty areas coated in wildfire ash can release dangerous fine particulate matter and toxic chemicals into the air.[66]

H Ashes from large vegetative fires near water bodies can cause long-term damage to aquatic ecosystems when rain causes runoff to carry ash into lakes, oceans, rivers, or streams. When this happens, elevated levels of the nutrients nitrogen and phosphorus from burned

Drinking Water Protection Recommendations

The first step residents impacted by wildfires should take is to check their local water system for an advisory and find the recommendations for their specific area.[54]

Unfortunately, the default Emergency Drinking Water Supply (EDWS) for communities after water systems issue "Do Not Drink" or "Do Not Use" water advisories is often plastic bottled water.[55] This is partially because filters, which are the safest solution to protect against lead, PFAS, and other pollutants like microplastics in most scenarios, are typically unable to eliminate the mixture of toxic contaminants often present in water after wildfires.[56] It is important to follow your water system's local advisory and recommendations for acquiring safe drinking water, even if that means bottled water is your only accessible option after wildfires.

We know that plastic bottled water has its own serious health costs, releasing microplastics and plastic chemicals into our bodies, in addition to harming the planet.[57] Further, despite bottled water's institutionalization as the leading emergency drinking water solution, there are safer and less expensive alternatives. In order to change the plastic bottled water status quo, key policies making healthier drinking water alternatives available in the wake of wildfires and other disasters must be implemented.

Key policy recommendations for states and local water systems to safeguard their constituents' drinking water during and after wildfires appear on page 29 of this report.

Post-Wildfire Protection Recommendations

While the immediate threats of wildfire may diminish once fires are extinguished, long-term environmental threats can persist for months or years following a disaster. Here are some recommendations to help you stay safe.

- Wash surfaces and textiles to reduce the presence of dangerous chemicals and particles from wildfires.[81] These can circulate in indoor air for months after fires.
- Avoid spending time in areas with wildfire ash, or where wildfire ash has run off into water bodies or the ocean, until local health authorities have declared them as safe. Children and pregnant people are especially vulnerable to the dangers of wildfire ash, smoke, and other lingering environmental contamination, including in soil and water. Air pollution indoors and outdoors can lead to asthma and other respiratory problems, and also birth and reproductive problems such as stillbirth.[82]
- Pay attention to wind advisories issued after wildfires to reduce your exposure to toxic windblown ash and stay indoors in a "clean room" if you have one, with a HEPA air filter on.[83]
- Be sure to wear the appropriate N-95 mask when outside, and keep children and pets indoors. Remove clothes and shoes if exposed to ash or smoke before coming indoors.
- Do not disturb or allow children or pets to play in contaminated soils, and avoid gardening in soils that contain wildfire ash.
- Test your soil, if possible.
  - If contaminated soil is found or suspected, use raised beds or containers with clean soil for gardening. Adding compost, manure, or peat moss to soil may reduce chemical absorption to produce.
  - Cover bare contaminated soils with compost, grass clippings, or woodchips to reduce risk of exposure.
  - Wash hands, pets' paws, and produce thoroughly if known or suspected to have come in contact with contaminated soil.
  - Clean and dust your home regularly to reduce lead and dirt particles.[84]

plant matter can cause harmful algae blooms to form in waterways.[67] This toxic algae can contaminate shellfish, causing paralysis or death for people who consume them; and pets have died from swimming in algae-filled waters.[68]

Ash contaminated with microplastics and other hazardous manmade materials and chemicals creates additional dangers. Microplastics and plastic chemicals are not static; they travel far and wide through different ecosystems and elements—such as from air to soil to water—and even protected areas are subject to pollution.[69]

Plastic chemicals and microplastics cause serious harm to aquatic ecosystems and the animals and plants that live in these environments. Microplastics pose both a chemical and physical danger to aquatic animals and plants, increasing their risks of disease, and reducing their lifespans and abilities to reproduce.[70] Microplastics and plastic chemicals also threaten people who consume aquatic animals and plants, or work or recreate in freshwaters or the ocean.[71] Many plastic chemicals are highly persistent, meaning they accumulate and last for long periods of time in the environment without degrading. Plastic chemicals found in the ocean, which can be carried there from wildfire ash runoff, are known to damage humans' and other animals' nervous systems, increase cancer risks, interfere with normal hormone functions, and reduce fertility.[72]

Wildfires that burn across vegetated areas can cause long-term damage to air quality, including emission of substantial amounts of VOCs and semi-volatile organic compounds (SVOCs) and nitrogen oxides that form ozone and particulate matter. Emissions of these toxic pollutants can directly affect first responders and local residents, while also drifting across long distances, exposing populations far from wildfires for days to weeks.[73]

Burning plastics exacerbate air quality issues during and after wildfires. When burned, plastics release toxic gases, particularly dioxins—which accumulate in the environment and can cause serious environmental and

I *Aftermath of the Eaton Fire in Altadena, Calif.*

J *Burnt-out home in Altadena, Calif.*

human health issues—as well as black carbon, heavy metals, particulate matter, PAHs, VOCs, and more.[74] During the January 2025 wildfires in Los Angeles, levels of toxic airborne lead and chlorine released from burning manmade materials surged past long-term safety levels set by the U.S. Environmental Protection Agency.[75]

Large wildfires cause significant release of carbon dioxide, black carbon (also called "soot," released from high-temperature burning of the built environment and vegetation), brown carbon (air pollution released from burning vegetation), and ozone precursors into the atmosphere.[76] This can affect the sun's radiation, cloud formation, and therefore the climate on regional and global scales. Additionally, burning plastic emits high levels of greenhouse gases into the atmosphere: 2.9 kilograms of carbon dioxide equivalent for every kilogram of plastic burned.[77] Plastic pollution, climate change, and the loss of biodiversity due to human activities are all interlinked issues driving major planetary change that threaten the survival of people, plants, and animals alive today.[78]

Wildfires Exacerbate Inequities in Housing and Public Health

In addition to the January 2025 Los Angeles wildfires releasing hazardous pollution and causing widespread damage to the natural and built environment, the disaster also exacerbated longstanding housing and public health inequalities across the affected region.

Wildfires & Racialized Communities

Red-lining, the practice of denying or limiting financing and implementing other forms of housing discrimination such as restrictive covenants based on the racial profiling of homebuyers and owners, has also shaped the racial makeup of communities across the U.S. For example, several historically Black areas of California, including Altadena, California, have been shaped by segregation of communities by race.[79] Unfortunately, communities with populations that are primarily Black, Indigenous, or People of Color are 50 percent more vulnerable to wildfires compared to white communities. Historical socioeconomic factors used to oppress certain groups such as forced relocation, lack of infrastructure and safety equipment, and unequal distribution of wealth all play a role in increasing the risks.[80]

For instance, research by the University of California Los Angeles shows that the majority of people harmed worst by the Eaton Fire were Black people living in historically Black neighborhoods in Altadena. In Altadena, more than 61% of Black households were located within the perimeter of the Eaton Fire, while 50% of non-Black households in Altadena were affected by the wildfire. Almost half (48%) of Black


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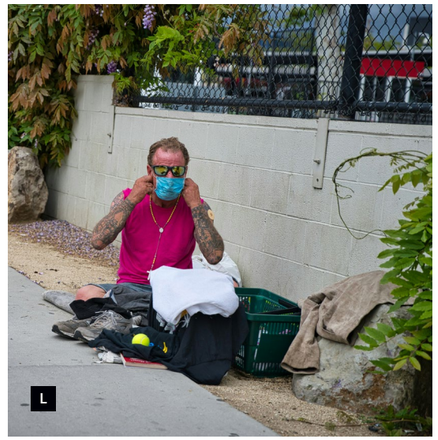
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households affected were destroyed or severely damaged by the wildfire. By comparison, 37% of non-Black households experienced such levels of destruction.

The population of Black homeowners in Altadena is aging, with 57% over age 65, which raises concerns around possibilities of insufficient insurance, and risks of financial exploitation linked to home rebuilding or restoration. It is expected that the fires' damage will also disrupt passage of generational wealth in the form of property to younger Black residents of Altadena. Rising property values and the perpetuation of unjust barriers to homeownership for Black buyers also prevent younger Black people from buying in Altadena. As a result, the fires have further strained the very existence of Altadena's Black neighborhoods.[85]

Wildfires & Outdoor Laborers

Between 500,000 and 800,000 farm workers reside in California: one third to half the population of farmworkers in the U.S.[86] In 2020, the state mandated that when air pollution reaches unhealthy levels (when fine air particles exceed 55 micrograms per cubic meter of air, or an Air Quality Index, AQI, of 150 or above), employers are required to take steps to protect their outdoor workers. This could include distributing masks and adjusting work schedules so workers avoid inhaling polluted air.[87]

However, researchers at the University of California, Davis have found that these standards may be too lax, making outdoor laborers—particularly farm workers—more vulnerable to health risks from wildfires. The thicker smoke is reaching agricultural fields, even at levels considered "safe" under California's standard, the more likely traumatic injuries—like contusions, lacerations, tears, and strains—are likely to occur among workers.[88]

K There are also long-term health problems that may arise from breathing in wildfire smoke while working outdoors. Many farmworkers and other outdoor laborers face barriers to healthcare and advocacy for safer work standards. Many are migrant workers who may only speak Spanish or Indigenous languages; they are likely to live in the same racialized neighborhoods most at risk of harm from wildfires. Many health problems among this population go unreported among employers due to difficulty with communication or fear of job loss, making this population even more vulnerable to harm.[89]

In the U.S., heat exposure causes annual labor losses of over $90 billion annually, while wildfire smoke is estimated to reduce annual labor income by $125 billion.[90] Some areas prone to wildfires are passing legislation aimed at better protecting farmworkers and other outdoor laborers from heat and wildfire smoke. For example, in 2022, Oregon passed rules requiring employers to give their employees protection and limited outdoor working hours when air quality is reduced by wildfire smoke.[91] On a federal level, lawmakers have proposed similar protections as well as hazard pay for outdoor laborers who are sidelined from work due to heat and wildfire smoke. However, such legislation has received pushback from many of the industries employing outdoor laborers, and meanwhile, is currently only regionally specific, and rules that are passed are not always adequately enforced.[92]

Wildfires & Unhoused Peoples

Nearly 150,000 people were displaced by the January 2025 wildfires in Los Angeles.[93] More than 12,900 households (single-family homes and housing units) were destroyed by the fires. Even those homes and housing units that were not destroyed continue to displace their residents, as a lengthy process of collecting insurance and remediating smoke and soot continue.[94] Many people without housing or who have housing in need of remediation remain in rentals and hotel rooms, with family members, or lack a place to stay—and risk being displaced for an extended period of time. This mass displacement has compounded the housing crisis in Los Angeles: 75,000 people experienced homelessness on any given day in 2024, with more than 50,000 of these people living outside in unsheltered locations.[95]

Unhoused, unsheltered people have also borne the brunt of some of the January 2025 wildfires' worst pollution in California. At the time of the fires, about 2,200 people lived without shelter in the area known as Skid Row, one of the most densely populated areas of unhoused, unsheltered people in Los Angeles.[96]

L Some of the most unhealthy air pollution readings were taken downwind of the Eaton Fire in downtown Los Angeles around Skid Row. The amount of particulate pollution from ash and debris in the air just north of Skid Row measured 483.7 micrograms per cubic meter, or almost 14 times the federal limit for daily average concentrations at its worst.[97]

Research shows that people who are unsheltered tend to have a higher exposure to ash and debris, resulting in a greater number of emergency room visits, than among people with housing. In addition to having a lack of shelter, unhoused populations are less likely to have access to other resources that can afford protection from wildfires, such as air conditioning, air filters, first aid equipment, and personal protective equipment (PPE).[98]

Other Vulnerable Populations

Other populations more vulnerable to serious problems linked to access to protective resources, housing, and public health support during and after wildfires include:

- Elderly people, who may lack adequate insurance, may be challenged to pay for repairs or relocation, and may have difficulty evacuating fires or relocating
- Families and individuals living in poverty, who may lack adequate or any insurance, and may have a reduced ability to prepare for a fire or relocate afterwards
- People housed in mobile homes, who may lack adequate insurance or may not be offered insurance for fires
- People with mobility challenges, who may have difficulty evacuating fires or relocating[99]

Burned forest in Quebec, aftermath of the 2023 wildfires in Canada

Part II:

Why Wildfires are Becoming More Destructive and Frequent

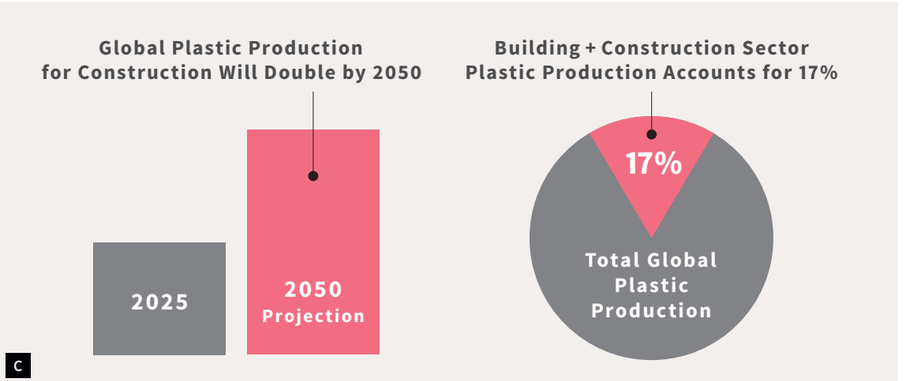
Modern life is dominated by plastics: polyester clothing against our skin, plastic foam mattresses to sleep on, and PVC pipes that comprise our plumbing.

Prolific Use of Plastics in the Built Environment and Rising Plastic Production

A Even outdoor spaces feature synthetic lawns and plastic decking. Companies are increasingly using discarded plastics otherwise designated as "waste" to create so-called "recycled" plastic
B building materials.[100] This ubiquitousness of plastics extends beyond consumer products into the very buildings that we call home.

C In fact, the building and construction sector accounts for 17% of global plastic production, second only to packaging.[101] The Organisation for Economic Co-operation and Development (OECD) projects that without intervention, plastic production for use in construction will nearly double by 2050—surpassing the 2019 all-time high level of plastic packaging production.[102]

Companies are increasingly using discarded plastics designated as "waste" to create so-called "recycled" plastic building materials.



The Escalating Climate Crisis and the Need to Cap Plastic Production

The World Meteorological Organization has confirmed that 2024 is the warmest calendar year on record, at about 1.55°Celsius (C) above the pre-industrial temperature mark. The 1.5°C warming limit is widely recognized as a threshold beyond which the worst effects of climate change will occur, seriously imperiling human and other life on a global scale. As part of the Paris Agreement, countries agreed to significantly scale back global greenhouse gas emissions to reduce the long-term average global temperature increase well below 2°C above pre-industrial levels, and ideally lower than 1.5°C. The previous 10 years (2015–2024) have been the warmest consecutive years on record.[103]

According to experts, a significant number of rapidly escalating consequences of climate change, including sea-level rise from the melting of ice sheets, melting of mountain glaciers, and ocean acidification, are essentially permanent. It could take centuries to thousands of years to restore to even today's conditions once global temperatures exceed critical levels.[104]

Climate change creates warmer, drier conditions in already arid, fire-prone areas, causing fire seasons to extend and become more active.

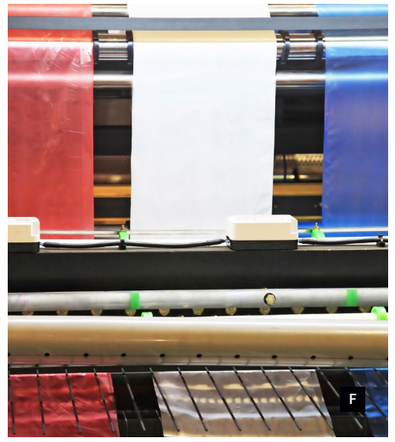
D Global temperature increases coupled with the increased water evaporation due to human-driven climate change have caused more than half of the observed drop in vegetation's moisture content in western U.S. forests from 1979 to 2015. Additionally, such increases in temperature also caused the doubling of forest fire burned area from 1984–2015.[105] Projections show that, in much of the U.S. West, an average annual 1°C temperature increase would raise the average annual burned area by as much as 600% in some forests.[106]

Wildfires further fuel climate change.[107] Wildfires produce significant amounts of carbon dioxide, and these emissions are growing over time as climate change intensifies and fuels more frequent and intense fires with drier, warmer conditions. Between 2001 and 2023, carbon emissions from forest fires increased by 60% worldwide. During the same time period, carbon emissions from wildfires in Eurasian and North American boreal forests nearly tripled.[108] Experiencing its warmest and driest conditions since 1980, Canada's extreme fires lasted for five months in 2023, releasing about 640 million metric tons of carbon—the equivalent emissions of about 170 coal-fired power plants running for one year.[109]

Climate-fueled wildfires create significant amounts of air pollution. In the U.S. in 2025, 156 million people, or about half the nation's population, were living in counties with failing grades for ozone or particulate matter pollution, according to the American Lung Association's 26th annual State of the Air Report. That was an increase of 25 million more people compared to 2024. The report's authors underscore that this trend is linked strongly to the worsening consequences of climate change, including more frequent and intense wildfires.[110]

D *Climate change saps plants of moisture*

Coal-fired power plants emit greenhouse gases E



F

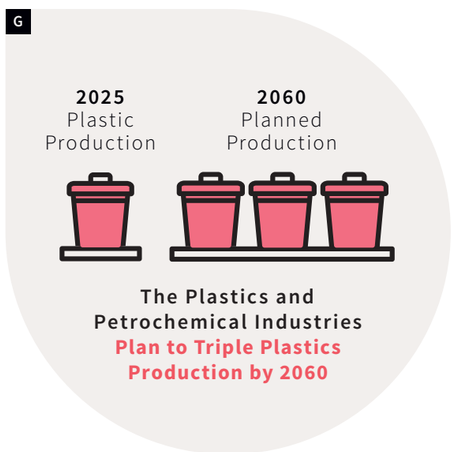
Ninety-nine percent of all plastics are made from petrochemicals derived from fossil fuels—gas, oil, and coal—and drive the climate crisis.

E Experts stress that it is necessary to minimize the duration and magnitude of temporarily exceeding 1.5°C with urgent and significant reduction of greenhouse gas emissions, centered around a rapid phase out of fossil fuels, to minimize human and environmental losses and damages.[111] Phasing out fossil fuels inevitably requires phasing out plastics. Experts recommend governments begin by rapidly implementing stronger regulation of, and a global cap on, production of plastics and plastics' chemical additives, which are largely made from fossil fuels.[112]

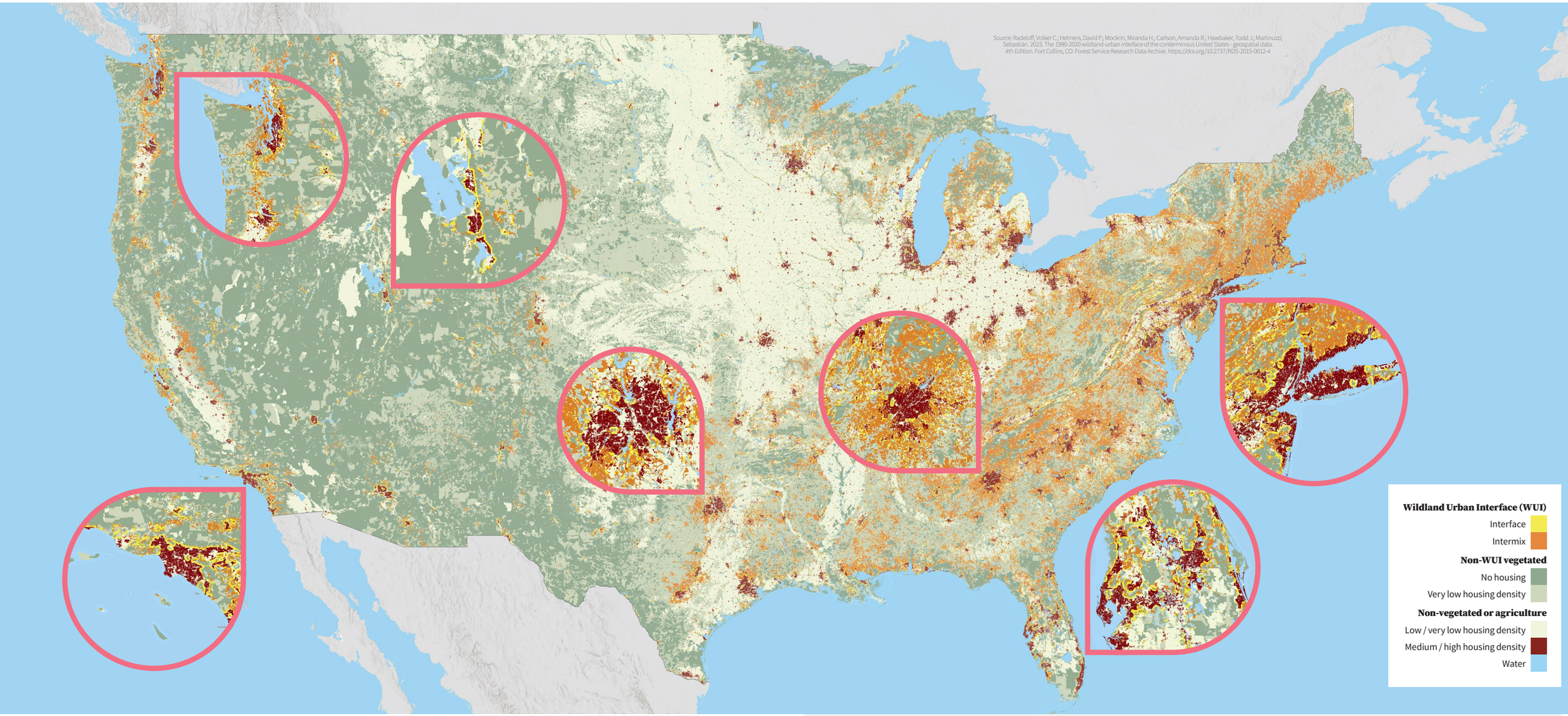
Plastic producers are significant users of fossil fuels, and plastic production is a major driver of the climate crisis. Ninety-nine percent F of all plastics are made from petrochemicals derived from fossil fuels—gas, oil, and coal—and drive the climate crisis. Fossil fuels are not only the main ingredients in plastics, but they also are burned as energy to extract fossil fuels for plastic production, manufacturing, shipping, and various forms of "disposal," releasing huge quantities of climate-warming greenhouse gases.[113] Plastic items, fragments, and particles are known to release climate-warming greenhouse gases when polluting the environment, in landfills, and when incinerated.[114]

G Despite the urgent need to cut our reliance on fossil fuels, the plastics and petrochemical industries plan to triple plastics production by 2060—threatening our chances of keeping global temperature rise below the critical 1.5°C threshold.[115] By 2050, plastic production and disposal could generate greenhouse-gas emissions equivalent to 615 coal plants annually and use up to 13% of Earth's remaining carbon budget. Microplastics and nanoplastics may be interfering with the ocean's ability to absorb and sequester carbon, our biggest natural carbon sink.[116]

G



The Plastics and Petrochemical Industries Plan to Triple Plastics Production by 2060



Fires and the Growing Wildland–Urban Interface

The catastrophic January 2025 fire event in Los Angeles County is one of a growing number of wildfires that have burned on the wildland–urban interface, or "WUI." The WUI is defined as areas where unoccupied wildlands meet human development.[117] Nearly 14 million people live in the 7 million acre zone that makes up the WUI in California alone—that's one in three people living across the state.[118] Los Angeles County, the most densely populated county in

The Wildland-Urban Interface is at High Wildfire Risk All Over the U.S.

MANY PEOPLE IN THE U.S. LIVE ON THE INTERFACE OF UNOCCUPIED VEGETATED LANDS AND DEVELOPED AREAS WHERE WILDFIRE RISK IS ELEVATED.

California and home to more than 9.6 million people, has had an especially high risk of wildfire danger since the late 1800s.[119]

Wildfires have been a necessary part of life on Earth for the last 400 million years.[120] On wildlands, lower-intensity, naturally occurring wildfires typically sparked by lightning incinerate brush and prevent large, hot fires from burning everything. Many ecosystems are sustained by periodic wildfires, which incinerate and clear dead organic matter and return nutrients to soils. A buildup of dead or decaying plants on the ground can hinder soil organisms' access to nutrients or prevent animals from accessing soils where they may need to look for food. An accumulated thick layer of dead organic materials can also smother the potential outgrowth of small, young plants.[121]

Wildfires are necessary to the survival and reproduction of certain animals and plants that have adapted to periodic burns. Fire chaser beetles can detect wildfires with their heat-sensing organs from dozens of miles away, and they lay their eggs in areas with recent burns to increase their youngs' odds of survival—as predators tend to flee areas of recent fires.[122] Lodgepole pine tree seeds are embedded in pine cones coated in resin that must be melted in order for the seeds to be liberated and germinate into more trees.[123] Many flowers, plants, shrubs, and trees bloom or germinate after fires, creating healthier, post-burn plant populations that can dramatically increase food availability throughout an ecosystem's food web.[124]

Many North American Indigenous communities for hundreds to thousands of years have lit small, controlled fires to attract game animals to grasses and other plants that grow after wildfires, and boost the long-term health of vegetation and forests. However, when European settlers came to the land now widely recognized as the U.S., settler communities began to suppress fires and prevent fire-driven forest ecosystems from burning to protect grazing lands and homes. Land management agencies have largely continued managing wildlands with fire suppression throughout the 20th Century. And while, in the last few decades, prescribed burns have become more common, land-management techniques have focused on suppressing wildfires.[125]

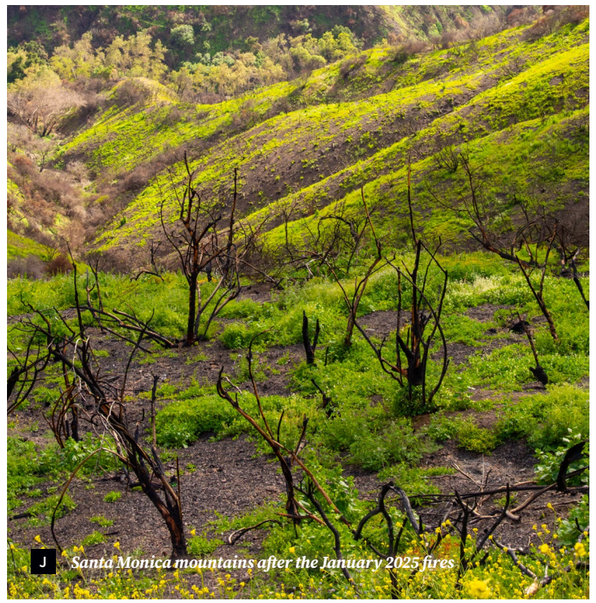
Today's fires tend to be hotter and larger than those of the past, capable of burning healthy trees that would otherwise survive smaller fires.

The prevention of fires from burning cyclically and naturally has drastically changed forests, especially at the WUI. Where fires have been suppressed, forests have accumulated significant amounts of decaying organic materials (essentially, large stores of ready-to-burn carbon), lost animal and plant diversity, have altered hydrology and are drier, and possess greater numbers of invasive species that weaken and kill native plants—especially trees—to increase forests' susceptibility to fires. As a result, today's fires tend to be hotter and larger than those of the past, capable of burning healthy trees that would otherwise survive smaller fires.[126]

Additionally, the growth of the WUI has increased the risks of wildfires and harm to people living in these areas. More development, infrastructure, and people in the WUI increases the chance of human-caused fire ignitions, including fires sparked by the electrical grid; unintentional fires such as those caused by campfires, cookfires, or discarded cigarettes; or intentional fires set by arsonists. What's more, wildfires in the WUI occur in proximity to people, posing increased risks to lives and homes. This also makes them more difficult to fight, because such fires cannot be allowed to burn—even if they have been sparked naturally.[127]

H

I *Lodgepole pines*



J *Santa Monica mountains after the January 2025 fires*

K *Hillside homes in Glendale, Calif.*

Part III:

How to Rebuild Better

Example Product Guidance: Insulation

Visit the Informed™ website for further information.

PREFER

- Expanded cork boards
- Blown-in wood fiber
- Blown and batt sheep's wool
- Hemp fiber batts
- Wood fiber batts and boards
- Blown-in fiberglass or mineral wool
- Unfaced fiberglass batts
- Formaldehyde-free mineral wool batts and boards
- Blown-in cellulose (loose fill)
- Unfaced formaldehyde-free fiberglass boards
- Kraft-faced fiberglass batts
- Cellulose/cotton batts
- Blown-in cellulose (dense pack and wet-blown)
- PSK or FSK-faced fiberglass batts
- Standard mineral wool batts and boards
- Standard fiberglass boards
- Halogen-free polyisocyanurate boards
- ASJ- or FSK-faced fiberglass boards
- Expanded polystyrene (EPS) boards
- Standard polyisocyanurate (polyiso) boards
- Extruded polvstvrene (XPS) boards
- Spray polyurethane foam (SPF)

AVOID

Plastic Insulation

Source: Informed™

The good news? *It doesn't have to be this way.* Most plastic building materials have healthier, more sustainable alternatives that are readily available. Industry-leading designers and builders are already making the switch away from plastic. Policymakers and insurance companies should recognize the harms plastics create in the built environment and reconsider standards and expectations. Those involved in recovering from wildfires are seeking ways to reduce or eliminate use of plastic building products as communities rebuild from destruction, creating resilient neighborhoods that transform tragedy into opportunity for a safer, healthier future.

Most plastic building materials have healthier, more sustainable alternatives that are readily available. Industry-leading designers and builders are already making the switch away from plastic.

Framing of wooden home; wood is one of many tried-and-true plastic-free building materials that is safer and less flammable than plastics

A *Wood and mineral fiber materials*

Alternative Materials to Plastic Building Products

If you specify or buy building materials, influence green building standards, invest in real estate, or influence policy, you have the power to help reduce the use of plastics in the built environment. Healthier and viable alternatives to plastic building materials are widely available today, often with comparable cost and performance. Habitable is an organization focused on the built environment that aims to improve human and environmental health, by creating bold, science-based solutions that inspire materials innovations to eliminate pollution, mitigate climate change, and create a more equitable future. Habitable's Informed™ product guidance leverages 25 years of independent research to help built environment practitioners select healthier, no/low-plastic building products. Informed™'s free, publicly available red-to-green product ranking allows practitioners to easily avoid worst-in-class products ranked red, and prefer those ranked yellow or green that tend to be no or low-plastic.[128]

We can all play a role in ensuring that safer

B

Policy Guidance for Safeguarding Drinking Water in Wildfire-Prone Regions

States and local water systems can make system changes to wildfire preparation and response such that they do not need to recommend or distribute bottled water. Above all, we recommend installation of plastic-free pipes to stop contamination at the source.

- States and municipalities must replace PVC and PEX plastic pipes with safer materials, such as recycled copper, that do not release toxic chemicals or become damaged when exposed to high heat. Plastic pipes are a health threat at every stage of existence.[129]
- Manufacturing PVC uses highly toxic mercury, forever chemicals (like PFAS), and asbestos. These chemicals are released into the environment and accumulate in our bodies, causing a range of health problems, like cancer and lung damage. Other toxic substances and probable carcinogens like vinyl chloride and ethylene dichloride are released into the atmosphere during PVC production.[130] Vinyl chloride was the extremely dangerous chemical that burned in the East Palestine train disaster.[131] In fact, some communities on the industrial fencelines of PVC production in Louisiana, such as in Morrisonville, Mossville, Plaquemine, and Reveilletown have been forced to relocate due to groundwater or air contamination.[132]
- The International Association of Fire Fighters (IAFF) and the United Association of Plumbers, Fitters, Welders and Service Techs (UA) have urged "developers, builders and code officials to reduce and restrict the use of plastics in building construction," including plastic pipes, further stating that "there are plenty of safe, sustainable and recyclable materials available today that don't pose health risks to workers or the public."[133]
- The U.S. Environmental Protection Agency (EPA) has echoed the call to reduce plastic pipes and other items; its Incident Action Checklist for utilities to consult after wildfires recommends the removal of all plastic pipes, meter boxes, meters, and tanks and their replacement with "more fire-resistant materials, like metals."[134] As municipalities work to replace burnt plastic pipes, it is paramount that they do not replace the problem with its cause.
- Additionally, local water systems can better ensure safe drinking water in emergencies without plastic pollution by considering the distribution of hauled and bulk water. States and municipalities should consider contracting one or more potable water tanker companies in advance to supply safe water after wildfires. This could be paired with hauling water from nearby water systems if they are determined not to be impacted by the wildfires.
- Hauled and bulk water can be distributed at various sites throughout an affected area in much the same way packs of plastic bottles often are, but municipalities should plan for diverse modes of reach to ensure equitable and accessible distribution.[135]
- Though many communities already use bulk water after emergencies, more research is needed on how best to plan and implement its distribution. The successful reach of similarly deployed portable water treatment systems, such as WaterStep's Emergency Mobile Drinking Water Treatment System (used after Hurricane Maria in Puerto Rico knocked out some residents' water access for months), proves a powerful example for the potential of hauled water.[136] The need for safe drinking water without the health threats of plastic pollution calls for more attention, research, and investment to be put towards this solution.
- Additional recommendations include:
  - *Form partnerships with neighboring water systems:* Establishing relationships with other utilities in advance can aid in resource, staff, and expertise sharing when emergencies arise. Nearby safe water systems could also help provide hauled water to impacted communities.[137]
  - *Provide housing to impacted residents:* For those displaced by wildfires, temporary housing often serves as the primary mechanism for safe and reliable water access.[138]
  - *Isolate contaminated pipes:* Utilities can prevent the spread of contaminated water through the installation of one-way valves that can shut off water flow from damaged areas before they reach water mains. This practice could ensure greater use of tap water in nearby areas after wildfires.[139]

Natural materials like wood, fiber cement, stone, and stucco are considered fire-safe while plastic-based materials are shown to ignite quickly and burn more intensely.

materials are front and center as communities recover from wildfires. A great place to start is by reducing or eliminating two of the most toxic plastics that exist today which are widely used in building and construction: polyvinyl chloride (PVC or vinyl) and polystyrene (PS).[140]

C PVC and PS are prevalent in several product types that can be easily substituted with safer materials:

- **XPS and EPS insulation can be replaced with:** fiberglass, mineral wool, cellulose, or wood fiber insulation
- **Vinyl siding can be replaced with:** brick, natural stone, fiber cement, solid wood, or stucco siding
- **PVC pipes can be replaced with:** recycled copper pipe
- **Vinyl flooring can be replaced with:** linoleum, ceramic tile, solid wood, or concrete

These alternatives include the most impactful products ripe for plastic reduction, but practitioners can find more complete guidance for 18 product categories on the Informed™ website.[141]

Instead of building with plastic products, natural (bio-based or mineral-based) products offer a range of fire-safe, economic, and sustainability co-benefits. Natural materials like wood, fiber cement, stone, and stucco are considered fire-safe while plastic-based materials are shown to ignite quickly and burn more intensely.[142] Additionally, natural materials often boast superior durability, withstanding the test of time far better than many synthetic alternatives. This longevity reduces the need for frequent replacements, minimizing long-term costs and waste.[143] Plant-based materials also tend to be a better choice for the climate as they have lower embodied carbon than their plastic counterparts. Overall, these benefits make natural materials a more resilient and responsible choice for construction.[144]

Policy Guidance for Eliminating Plastic from Buildings

Better policy is possible at every level of government. The federal government can support risk evaluation of plastics, especially PVC. Cities can introduce procurement policies that limit PVC and polycarbonate use. States can indirectly reduce the use of plastic insulation by instituting bans on PFAS blowing agents.[145]

Policy and policymakers can play a key role in reducing and eliminating plastic use in building products. Habitable recently published a policy brief with the following guidance:

Set Clear Goals

Set goals for reduction of plastics and hazardous chemicals consistent with the UN Sustainable Development Goals and UN Global Framework on Chemicals.[146]

Define Safer Alternatives

Define safer alternatives using a hazard-based approach. This definition can be codified in practice; for example, in the U.S., the state of Washington adopted a definition and criteria for "safer" under its hazard-based Safer Products for Washington law to regulate classes of chemicals in a wide range of products.[147]

Transparency

Require transparency and public disclosure of chemicals and additives used in the production of products, ensuring this information is trackable and traceable through the value chain.

Essential Use Approach

To reduce unnecessary uses of plastics, policies could take an "essential use" approach to both chemicals and materials. The concept of essential use originated as a policy tool to limit hazardous chemicals, but is also applicable to materials. Such chemicals and materials could be categorized as "essential," or temporarily difficult to replace, if there are no safer alternatives to the plastic material currently available—not in the sense that alternatives exist but are considered economically infeasible, but rather that viable safer alternatives do not currently exist at all.

A plastic material could be deemed temporarily essential only if all of the following are true:

- There are no safer alternatives to the plastic material available; **and**
- The function of the plastic material is necessary for the product to work; **and**
- The plastic material is being used in a product that is critical for health, safety, or the function of society.

If any of these statements is false, that use is non-essential. Any use deemed temporarily essential should be prioritized for research to develop and replace with safer alternatives.

Prioritize Eliminating the Most Hazardous

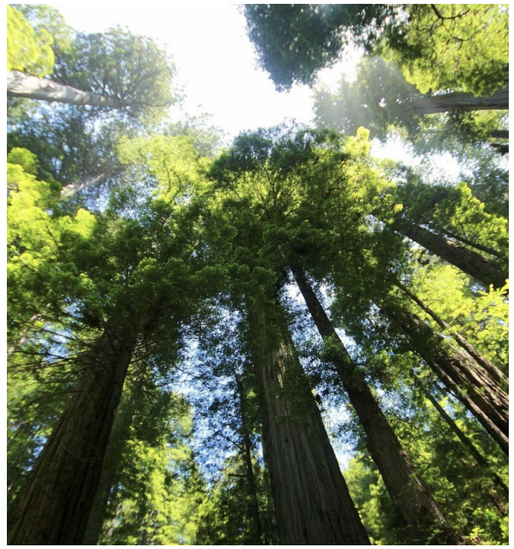
Prioritize eliminating the most hazardous plastics and chemicals first and use a group/class-based approach rather than one chemical at a time. This approach will reduce chemical hazards throughout the entire life cycle of products, including safer reuse and recycling. Safer alternatives to plastic materials include alternative materials, products, processes, and systems.

Eliminate Petrochemical Subsidies

Ensure a level playing field for no/low-plastic materials by removing subsidies to petrochemical industries, and repurpose subsidies to reward safer and more equitable material production.

Recognize Construction Plastics

Include building materials in the scope of plastics, chemical, and other relevant policies. To date, global policymakers focused on plastic pollution reduction have prioritized reducing single-use plastics and packaging, as they are leading sectors for both production and waste. Policies have also focused on restricting hazardous chemicals within plastics, including orthophthalates, metals, bisphenols, flame retardants, and chlorinated paraffins in packaging, children's products, and other product categories. However, meaningful progress toward plastic pollution reduction requires expanding policy action to address plastic use in the building sector, targeting problematic plastics themselves in addition to chemical classes of most concern.



Choosing plastic-free, truly circular alternatives to plastics across building applications wherever possible could help significantly reduce plastic production and pollution

Conclusion

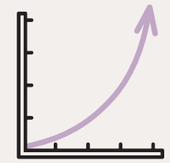
Plastic pollution and the climate crisis are fueled by plastic production. To date, more than 10 billion metric tons of plastic have been produced, and over the past 65 years plastic production has increased by more than 18,300%.[148] More than 400 million metric tons of plastic are now produced each year, and without action to curb plastic production this number is only expected to triple by 2060.[149]

To solve plastic pollution, policies must require industries to steeply curb plastic production and phase out fossil fuels.[150] They must also incentivize truly "circular" regenerative and reusable materials, as well prioritizing chemical simplification, among other solutions to eradicate the damaging effects of plastic's endless toxic existence, from fossil fuel extraction and processing to plastic manufacturing, use, and disposal.[151]

More than 60% of all plastics produced today are used for packaging and transportation (i.e. vehicle components), with 17 percent used for building and construction.[152] It is expected that these sectors will see the greatest increases in plastic production now and into the future. Tapping into plastic-free, truly circular alternatives to plastics across these applications wherever possible could help significantly reduce plastic production, while also lessening plastic's climate impacts. Alternatives to plastics in building materials exist today.

Los Angeles and other WUI regions damaged by or prone to fires can build back better and prevent future disasters by choosing safer, less flammable material alternatives to plastics. Building policies incentivizing better choices and better municipal planning can help guide a new way forward.

To date, more than 10 billion metric tons of plastic have been produced



Over the past 65 years plastic production has increased by more than 18,300%

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