

Climate-exacerbated wildfires cost the U.S. between \$394 to \$893 billion each year in economic costs and damages

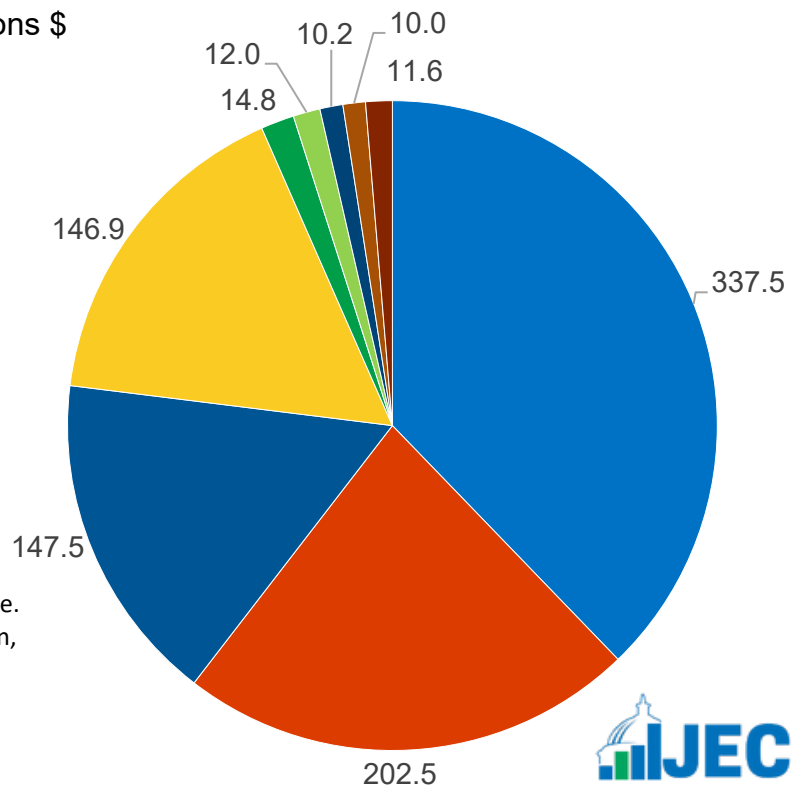
Wildfires represent a growing [threat](#) to the health and well-being of communities across the country. The United States has already seen a devastating string of catastrophic wildfires this year in places like [Maui](#), the [western United States](#), and [Louisiana](#) as these disasters become more and more [damaging due](#) to [climate change](#). This continues a string of deadly wildfire years that make the threat of wildfires to people and the broader economy increasingly clear.

The total cost of **wildfires in the United States is between \$394 billion to \$893 billion each year**. This range was calculated by combining estimates from the existing research on the specific costs related to property damage, direct and indirect deaths and injuries, health impacts from wildfire smoke, income loss, watershed pollution, and a range of other factors. Each of these impacts on their own are very costly. Taken together, they represent disastrous consequences for the country.

Climate-Exacerbated Wildfires Cost As Much as \$893 Billion Per Year

Annual Total Costs and Losses in 2022 Billions \$

- Diminished Real Estate Value
- Exposure to Wildfire Smoke
- Income Loss From Wildfires
- Watershed Costs
- Insurance Payouts
- Timber Loss
- Property Damage
- Electricity Costs
- Other Costs



Note: Chart shows the higher end of the estimated range. Other Costs include evacuation costs, wildfire suppression, direct death and injuries, insurance premium increases, learning loss, tourism loss, and psychological costs.

Source: Analysis by JEC Democratic Staff



The total annual economic burden of wildfires in the United States is between \$394 billion and \$893 billion.

The JEC Democratic Majority's analysis finds that wildfires in the United States cause between \$394 billion and \$893 billion dollars in damages annually, which is equivalent to between 2-4% of U.S. GDP. This range is notably higher than existing estimates in the [literature](#), which put the total cost of wildfires at between \$87.4 and \$427.8 billion in 2022 dollars annually based on a smaller subset of costs. The economic costs in this analysis include: diminished real estate values, lost income, damage to watersheds and aquifers, insurance payouts, timber loss, property and infrastructure damage, electricity costs, evacuation costs, federal wildfire suppression costs, school and learning losses related to wildfires, insurance premium increases, and tourism loss. The health costs of wildfires accounted for in this analysis include direct deaths and injuries from wildfires, costs from short and long-term exposure to wildfire smoke, and psychological costs.

The total cost estimates in this report should be viewed as a likely undercount of the true total cost, as there are several costs connected to wildfires that have not yet been fully quantified by researchers. These additional costs include: how post-fire [erosion](#) harms agriculture and makes mudslides and flooding more likely; post-wildfire [rehabilitation](#) costs to help burn scars and other parts of the ecosystem recover; and the costs of [managed retreat](#) when certain areas become too [wildfire prone](#) to live in. Including these effects would push the total cost estimates even higher. Climate change is also likely to increase many of these costs going forward, as wildfires burn longer and produce more [smoke](#), which would further enlarge the total cost of fires.

These significant costs from wildfires motivate continued policy action to reduce the incidence of catastrophic wildfires and address their significant effects on people and the planet.

The immense cost of wildfires—both the human toll and the economic damages—requires government action. At the federal level, investments from the Inflation Reduction Act to combat climate change will cut down on the greenhouse gas pollution that is a root cause of these larger wildfires. Additionally, improving the aging U.S. energy grid, especially through modernized transmission lines, can [reduce](#) the risk of wildfires ignited by electricity infrastructure. The newly announced [American Climate Corps](#) will also put more than 20,000 young people on career pathways in fast-growing sectors tied to clean energy and climate resilience, including work on forest management that can prevent [catastrophic wildfires](#). These and other preventive measures, such as more prescribed burning, can ultimately make wildfires less damaging; though they will take time to have an effect.

Ensuring that pay for the wildland firefighters who help protect communities from wildfire damage is high enough to recruit and retain those fighting these wildfires will also help curb costs. One clear way to do this is by passing the [Wildland Firefighter Paycheck Protection Act](#), which would codify the temporary pay increase for wildland firefighters included in the Bipartisan Infrastructure Law, which is otherwise set to expire on November 17th. Providing FEMA with additional funds to replenish its [dwindling](#) relief funds, and giving the Agency increased [flexibility](#) in how it deploys funds, would help communities better recover from these increasingly severe and costly wildfires.

Methodology and Technical Appendix

This section includes additional details on how the underlying studies used in this analysis calculated specific cost and damage estimates related to wildfires. Some of these underlying estimates are taken directly from the literature while others were calculated by the JEC Democratic staff based on information in the literature. While the final calculations were adjusted to account for any overlap identified across categories, there is still a possibility that some double-counting occurred across categories. Given that the topline total cost estimates likely reflect an underestimate (as explained above), the impact of any additional double counting is likely small.

Because many of these underlying studies and cost estimates focused on different calendar years, the total economic cost estimate is for a generalized wildfire year instead of for one year in particular. Adjustments have been made on all the damages and cost estimates to 2022 dollars using the [Consumer Price Index](#) for December of each year.

Diminished real estate value from wildfires is estimated to cost Americans \$67.5 - 337.5 billion.

As people move closer to the wildland urban interface and climate change exacerbates wildfires in the western United States, more properties are at risk of wildfire damage. This leads to [asset depreciation](#). As real estate values decrease and people move away from areas at risk from fires, that also decreases the possible tax base for property tax revenue. The inflation-adjusted \$337 billion total cost estimate used in the underlying study stems from a wildfire insurance pricing gap where wildfire risk is currently underestimated for insured homes, along with the related drop in local tax revenue and other economic activity. These costs are expected to be realized between [one year \(high end\)](#) and five years (low end) from now, which motivates including either the entirety of this cost or a fraction (in this case 1/5th) in the total annual cost range.

Costs from short and long-term exposure to wildfire smoke are estimated at \$117.5 - 202.5 billion.

[Smoke](#) from wildfires (particulate matter, nitrogen oxides, and ozone) can lead to premature mortality; increased asthma incidences, including among children; and many other negative health outcomes. The underlying estimate calculates the annual short and long-term costs from wildfire smoke in terms of hospital admissions for cardiovascular diseases, respiratory illnesses, and premature deaths. While this estimate does include some smoke from prescribed fires, the costs from prescribed fires are minimal in comparison to wildfire smoke. Wildfire smoke produces much more smoke across the United States and [more smoke](#) per fuel burned than prescribed fires.

Income loss from wildfires is estimated at over \$147.5 billion.

According to a National Bureau of Economic Research (NBER) report, wildfires affect [labor](#) in many ways, including diminished labor income, employment, and labor force participation as wildfires disrupt businesses, force evacuations, and hinder employees from getting to work. The study looks at the total effects of wildfires and wildfire smoke on the U.S. population to calculate a total effect on national income.

Watershed and water quality costs from wildfires are estimated at \$14.69 - 146.9 billion.

[Wildfires](#) can increase the risk of runoff and erosion and have detrimental effects on [water](#) supplies, including increasing treatment cost, need for alternative supply, and diminished reservoir capacity. The Joint Economic Committee calculated this cost estimate by taking a researcher's estimate that a large wildfire can cause water production costs of \$10-100 million in 2020 dollars, transitioned it to 2022 dollars, and multiplied this by the National Interagency Fire Center [estimate](#) of large wildfires in 2022.

Insurance payouts from wildfires are estimated to cost between \$8 - 14.8 billion.

Damage from wildfires to [insured assets](#) has surged with an increase in fires. Some of these damages include interruptions to businesses, such as if they must shut down due to wildfires threatening them physically or [cutting off access](#) for workers or customers. They may also include evacuation costs.

Wildfires could cause between \$7.1 - 12 billion in timber losses each year.

[Timber](#) that is destroyed cannot be harvested and sold. The underlying study used a cost estimate of the timber loss cost associated with acres burned in a year in Florida extrapolated nationally. This is not a perfect extrapolation, given that Florida forests are not representative of the many different ecosystems throughout the country. This cost estimate also excludes the effects of timber companies [losing](#) equipment, infrastructure, or other resources, which would push this component even higher.

Wildfires are estimated to cause \$10.2 billion in costly property damage.

Wildfires can wreak havoc on [homes, businesses](#), and infrastructure. Even if the physical structure was not harmed, wildfire smoke damage can be extensive and needs to be remediated due to its harm to human health. The underlying report uses physical risk data and a variety of realized insurance claims from FEMA and other sources to calculate damages.

Electricity costs related to wildfire risk are estimated to exceed \$10 billion in California alone.

Customers will need to use more energy for air conditioning as the world warms and as climate-fueled wildfires compel people to keep windows closed to prevent wildfire smoke inhalation. Wildfires also threaten power lines and other parts of the [energy grid](#), necessitating large mitigation measures to avoid rolling blackouts, large ignition risks, and other effects. Some utilities are trying to hand off some of these costs to consumers, raising utility costs. Total planned investment from investor-owned utilities to make more fire-resilient energy infrastructure exceeded \$10 billion dollars in California alone. To date, this type of cost estimate has only been completed for California.

Evacuations due to wildfires cost over \$3.6 billion.

[Evacuations](#) due to wildfires create both direct costs on people (i.e. the costs of relocating) along with indirect costs like the loss of personal and business income during the duration of the

evacuation. While there has not been a study looking at wildfire evacuation costs across the contiguous United States the underlying report used for this estimate combines the daily evacuation costs observed during hurricanes with estimates of the number of evacuees and length of evacuation to produce a \$3.6 billion total cost estimate of wildfire evacuations. It is possible that some portion of the income lost solely due to wildfire evacuations in this total is also included in the much larger estimate of total lost income due to wildfires described above.

Federal wildfire suppression cost nearly \$3.5 billion dollars.

While passive fire protection has the potential to lower wildfire costs, suppression and other wildfire protection costs like retrofitting or building new structures resilient to wildfires have increased over the last several decades. This cost [estimate](#) is the federal cost of wildfire suppression.

The reduction in future earnings from school and learning losses due to wildfires are estimated at \$2.1 billion.

Recent research found a link between wildfire smoke exposure and [lower test scores](#) for children in school, which can lead to lower earnings later in life. The underlying study estimated a discounted value of future earnings associated with wildfire smoke exposure in a year.

Insurance premium costs from wildfire risk are estimated at \$1.6 billion.

[Premiums](#) in wildfire-prone states, like California and Colorado, have surged or become unattainable due to insurers [pulling out of markets](#) [pulling out](#) of markets that they deem too exposed to wildfire risk. The study that this estimate is based on quantified how much "homeowners in risky communities" are currently paying for the wildfire component of their standard homeowner's insurance in California and the rest of the western United States.

Direct death and injuries from wildfires cost \$607.9 million.

Wildfires can cause [bodily harm](#), which is quantified through the value of the statistical injury or life. The underlying estimate calculates the cost of direct fire-related civilian and firefighter injuries and deaths. The health impacts of wildfire smoke are quantified separately.

Tourism loss due to wildfires cost at least \$118 million in California and Oregon alone.

Wildfires make certain areas, especially [popular public lands](#), inaccessible during prime [tourism](#) season. Wildfires can also more broadly hinder tourism by complicating travel and creating hesitancy around visiting certain areas. This estimate focused solely on public lands in parts of California and Oregon, suggesting that the total costs are likely much higher.

Psychological costs from wildfire risk are estimated at \$30 million.

The [psychological](#) costs of wildfire risk quantified here are the cost of post-traumatic stress disorder treatment for deployed firefighters using estimates of exposed firefighters annually and military costs of treatment. The psychological costs for civilians should also be quantified by a similar method, but estimates for the extent of exposure of the civilian population were not yet available when this study was done.