

# Impact of Climate Change



**Prepare** all firefighters for the climate-driven increase in wildfires in the wildland-urban interface (WUI) and in rural and suburban communities by providing them with the proper training and equipment.

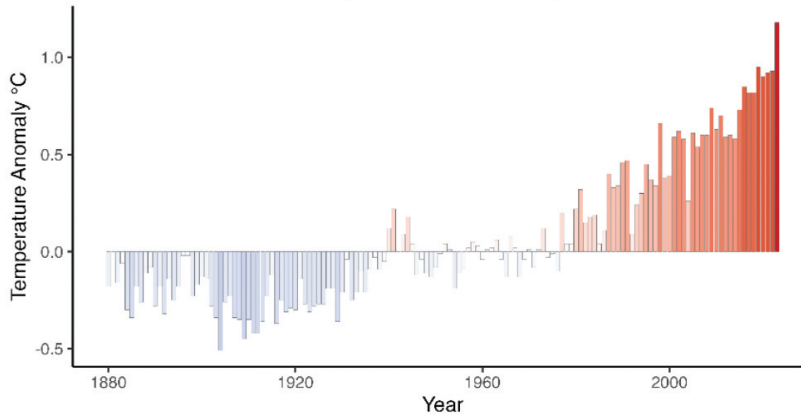
## Issue

According to a June 2022 U.S. Congressional Budget Office (CBO) report, the intensity of wildfires has increased, as has the number of wildfires impacting the built environment over the past 30 years<sup>1</sup>. As our nation continues to grow and develop in the wildland urban interface (WUI), our communities face increased wildfire threats associated with increased populations, reduced land management practices, dangerous buildups in fuel, and climate change.

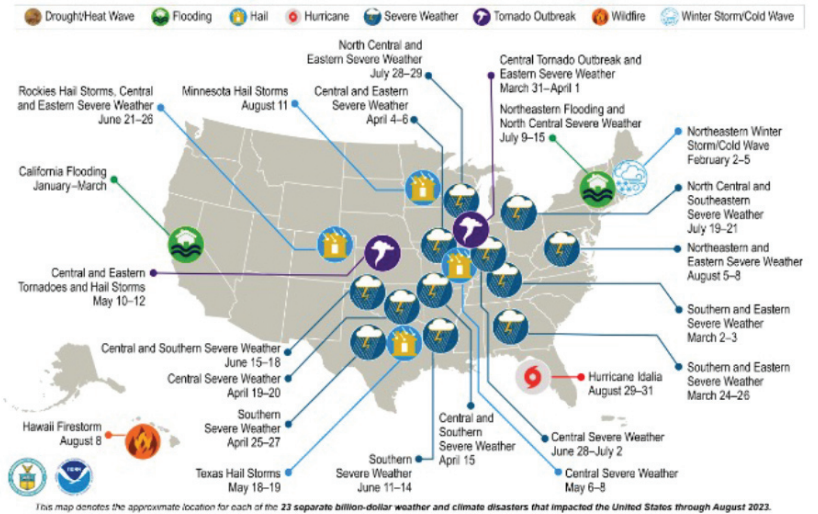
Climate is further exacerbating conditions. NASA's long-term temperature monitoring found July 2023 to be the hottest July since record-keeping began in 1880<sup>2</sup>. While fluctuations are expected and normal, data points to a warming climate, with the five hottest Julys recorded in the previous five years.

Furthermore, an August 2023 NOAA assessment of U.S. climate found a record number of billion-dollar disaster events to date in 2023<sup>3</sup>. Among the disasters identified by this report is the August 8 wildfire on the island of Maui, HI. Worsened by Hurricane Dora's winds, the wildfire has become the deadliest in the United States in over a century.

NASA July 2023 Global Temperature



U.S. 2023 Billion-Dollar Weather and Climate Disasters



## Impact Areas

### Firefighting Resources

Wildfire knows no boundaries; fires can start and burn across federal, tribal, state, local, and private lands. That means fires are often fought with a combination of agencies and firefighters from different backgrounds and employers. These differences range from seasonal Federal firefighters to volunteer firefighters coming from a community-based fire department to structural firefighters working in a local municipality who have little to no training for operating in an urban or suburban conflagration with multiple structures burning simultaneously.

Advances in command and coordination, especially at large, long-duration events, have improved resource deployment and operations on the ground. However, these resources often take time to get into place. Therefore, the initial response comes from local fire departments that are often already dealing with strained, overworked staff.

Local fire department responders are typically trained as structural firefighters, given that single-family dwellings are the most common fire risk they encounter. Structural firefighters accustomed to fighting one structure fire at a time are now confronted with multiple structures burning and must react and respond with different tactics and strategies to mitigate the event safely and effectively. The reality is that they must add urban interface wildfire response to their operational repertoire.

As the risk of losing entire communities from wildfire extends to a year-round reality, staffing resources and proper training are necessary to fight these WUI fires.

### Training and Equipment

With climate change and the expansion of the built environment into the wildland, each year fires grow larger and pose a greater danger to the public. There is a need to mitigate these incidents as quickly as possible, placing even greater importance on training and equipping traditionally trained structural firefighters to respond to urban interface incidents.

“The Fifth Needs Assessment of the US Fire Service,” published by the National Fire Protection Association (NFPA), found that while 87% of structural fire departments respond to interface fires, just under half (47%) have training on interface fires involving multiple structures<sup>4</sup>. In addition to firefighting, many departments are tasked with supporting other needs, such as evacuations, creating even greater strains or overburdened systems.

### Water Access

Particularly in the West, water is a limited and often contested resource. Drought conditions elsewhere in the country have similar effects. The scarcity of water has a severe impact on firefighting efforts. Burn scars following a fire can contaminate water resources as debris and other contaminants affect availability and treatment efforts.

#### Differences between wildland and structural firefighting

| Wildland   | Structural   |
|--|--|
| <b>Gear</b>  |  |
| Lightweight gear designed to be worked in hours              | Heavy, protective gear designed to protect from fire; only meant to be worn for a limited amount of time due to weight |
| Lightweight helmets to protect from falling trees and debris | Heavyweight helmets  |
| NO SCBA  | SCBA to protect airways and breathe during firefighting operations   |
| <b>Tactics and Strategy</b>                                  |  |
| Defensive  | Offensive  |
| Significant impacts from changes in weather                  | Weather can impact but not as a severe risk  |
| Lack of water  |  |

Source: <https://www.12news.com/article/news/local/arizona/differences-between-fighting-urban-fire-and-wildland-fire/75-482613801>

<sup>1</sup> Wildfires. Congressional Budget Office. June 2022. <https://www.cbo.gov/publication/57970>

<sup>2</sup> NASA Clocks July 2023 as Hottest Month on Record Ever Since 1880. Global Climate Change/NASA. Published August 14, 2023. <https://climate.nasa.gov/news/3279/nasa-clocks-july-2023-as-hottest-month-on-record-ever-since-1880/>

<sup>3</sup> Assessing the U.S. Climate in August 2023. NOAA, National Centers for Environmental Information. Published Sept 11, 2023. <https://www.ncei.noaa.gov/news/national-climate-202308>

<sup>4</sup> Fifth Needs Assessment of the US Fire Service. NFPA. December 2021. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Needs-assessment>

More Information ▶

