

To The Point

Climate Change and Natural Hazards

Resources to Protect Your Business

CHUBB®



Global Warming - The Facts

Since the Industrial Revolution, Earth's annual temperature has increased in total by just over 1 degree Celsius, or about 2 degrees Fahrenheit.¹ Between 1880, the year that accurate recordkeeping began, and 1980, it rose on average by 0.07 degrees Celsius (0.13 degrees Fahrenheit) every ten years.² Since 1981, however, the rate of increase has more than doubled.³

The planet has never been hotter in recorded history. Nine of the ten warmest years since 1880 have occurred since 2005 – and the five warmest years on record have all occurred since 2015.⁴ The impacts of global warming are far-reaching, harming people and property around the globe. The effects include extreme droughts, wildfires, floods, tropical storms, and more.

What's Causing Temperatures to Rise?

Global warming occurs when carbon dioxide (CO₂) and other air pollutants collect in the atmosphere and absorb sunlight and solar radiation that have reflected off the earth's surface.

Normally, this radiation would escape into space, but these pollutants, which can last for years to centuries in the atmosphere, trap the heat and cause the planet to get hotter. These heat-trapping pollutants—specifically carbon dioxide, methane, nitrous oxide, water vapor, and synthetic fluorinated gases—are known as greenhouse gases, and their collective impact is called the greenhouse effect.³

The current era of global warming is directly attributable to human activity—specifically to our burning of fossil fuels such as coal, oil, gasoline, and natural gas, which results in the greenhouse effect.

Slowing climate change requires deep cuts in emissions and using alternatives to fossil fuels worldwide. To avoid the worst impacts of climate change, scientific consensus tell us that we need to reduce global carbon emissions by as much as 40 percent by 2030.⁵ For that to happen, the global community must take immediate, concrete steps: to decarbonize electricity generation by transitioning from fossil fuel-based production to renewable energy sources like wind and solar; to electrify our cars and trucks; and to maximize energy efficiency in our buildings, appliances, and industries.

Chubb Risk Consulting



2020 Atlantic Hurricane

season included a record-breaking
30 tropical storms,
6 major hurricanes, and
13 hurricanes



Antarctica has lost nearly
4 trillion metric tons
of ice since the 1990s



20 to 50 percent increase
in the number of days when conditions
are conducive to fires



2017 was Costliest on Record
and among the deadliest. Nearly
\$300 billion in damage and
led to more than **3,300** fatalities



The general expectation is that
hailstorm frequency
will increase
in Australia and Europe, but decrease in
East Asia and North America

Connections Between Climate Change and Extreme Weather

Rising temperatures are fueling more frequent and severe natural hazards including longer and hotter heat waves, droughts, more severe wildfires, intense rainfall events, and more powerful hurricanes. Ocean temperatures are getting warmer, too—which means that tropical storms can pick up more energy. In fact, NOAA scientists have found that the frequency of North Atlantic hurricanes has increased since the early 1980s, as have the number of more intense and powerful storms. The 2020 Atlantic hurricane season included a record-breaking 30 tropical storms, 6 major hurricanes, and 13 hurricanes altogether.⁶ With increased intensity come increased damage and death.

The impacts of global warming are being felt everywhere. Antarctica has lost nearly four trillion metric tons of ice since the 1990s. The rate of loss could speed up if we keep burning fossil fuels at our current pace, some experts say, causing sea levels to rise several meters in the next 50 to 150 years and wreaking havoc on coastal communities worldwide.

Resources to Protect Your Business

Scientists agree that the earth's rising temperatures are fueling longer and hotter heat waves, more frequent droughts, heavier rainfall and increased flooding, rising sea levels, and more powerful thunderstorms, hailstorms, and hurricanes. These Chubb Risk Consulting resources can help you protect your business:

Wildfire & Drought: Extreme weather and drought events are being experienced on a global scale. The effects of climate change on increasing temperatures, decreased precipitation levels, and decreased soil moisture have increased the fire season and acres at risk. Recent studies predict that the number of large,

high-intensity fire events will increase globally, in part due to a 20 to 50 percent increase in the number of days when conditions are conducive to fires. Combined with increasing development along the wildland-urban interface, these dynamics present an increased potential for wildfire events, as well as increased exposure to people and property from these events. For more information on how to protect your business, [click here](#).

Hurricanes, Windstorm & Floods: The United States saw an unprecedented 22 weather and climate disasters that caused at least a billion dollars worth of damage in 2020, but 2017 was the costliest on record and among the deadliest as well: Taken together, that year's tropical storms (including Hurricanes Harvey, Irma, and Maria) caused nearly \$300 billion in damage and led to more than 3,300 fatalities. For more information on how to protect your business from hurricanes, [click here](#). For resources specifically on preparing for floods, [click here](#).

Extreme Cold Weather Events: Climate change has increased the frequency with which the polar vortex weakens and allows cold air to spill over and into traditionally warmer regions.⁷ As shifting weather patterns and temperature anomalies continue to be measured and studied, businesses should continue to be prepared for the unexpected – even in those regions with normally warmer climates. For resources on cold weather preparedness, [click here](#).

Hail: Due to global warming, hailstorm likelihood has increased, enabling the formation of larger hailstones. The general expectation is that hailstorm frequency will increase in Australia and Europe, but decrease in East Asia and North America, while hail severity will increase in most regions.⁸ For information on how to protect your property, [click here](#).

Climate change preparedness, property conservation, and business continuity are resilience objectives that cannot afford to be ignored any longer

Business Continuity Planning: Climate change challenges the resiliency and stability of your business. A strong and proven business continuity plan is more critical than ever before to help limit loss as the result of not only natural hazards vulnerabilities but much more – including pandemic, cybersecurity, civil unrest, supply chain, and so much more. For business continuity planning resources, [click here](#).

Supply Chain Resiliency: Over recent years, incidents of flooding, earthquakes, and hurricanes have subjected thousands of firms to disruptions that have closed plants for days or weeks and directly resulted in billions of lost revenues. Some of these firms never recover or recover so slowly that the clients who rely on them are forced to find other suppliers or suffer significant loss of revenue themselves.

Summary

The impact of climate change on your business, property, and people must not be underestimated. Climate change preparedness, property conservation, and business continuity are resilience objectives that cannot afford to be ignored any longer. For more information on protecting your business, contact your local risk engineer, visit the [Chubb Risk Consulting Library](#), or check out www.chubb.com/engineering.

References

1. [New Studies Increase Confidence in NASA's Measure of Earth's Temperature](#). <https://www.giss.nasa.gov/research/news/20190523/>
2. [GISS Surface Temperature Analysis](#). <https://data.giss.nasa.gov/gistemp/uncertainty/>
3. <https://www.nrdc.org/stories/globalwarming-101>
4. NOAA. [https://www.noaa.gov/news/2019-was-2nd-hottest-year-on-record-for-earth-say-noaa-nasa#:~:text=Home,2019%20was%202nd%2Dhottest%20year%20on,for%20Earth%20say%20NOAA%2C%20NASA&text=The%20world's%20five%20warmest%20years,for%20Environmental%20Information%20\(NCEI\)](https://www.noaa.gov/news/2019-was-2nd-hottest-year-on-record-for-earth-say-noaa-nasa#:~:text=Home,2019%20was%202nd%2Dhottest%20year%20on,for%20Earth%20say%20NOAA%2C%20NASA&text=The%20world's%20five%20warmest%20years,for%20Environmental%20Information%20(NCEI))
5. [EU Action, Climate Strategies and Targets](#). https://ec.europa.eu/clima/policies/strategies/2030_en
6. NOAA. <https://www.noaa.gov/media-release/record-breaking-atlantic-hurricane-season-draws-to-end>
7. <https://earth.org/climate-change-isdriving-a-deep-freeze-into-texas/>
8. <https://www.nature.com/articles/>