

Climate Change and Unnatural Disasters

Climate change is exacerbating extreme weather events across the world, causing thousands of deaths and leading to damages in the trillions of dollars.¹ What's more, it could make parts of the planet uninhabitable this century.²



While the impacts of climate change will affect all of us, certain areas will be more directly affected than others. These impacts will fall disproportionately on low-income communities.³ These effects can be subtle, such as higher food prices in the grocery stores, or more dramatic, like high tide flooding in coastal cities.⁴

More Intense Weather

This year has brought scorching heatwaves to the Southwestern United States, disastrous hurricanes to the Gulf Coast, and destructive forest fires to the Western United States. While none of these events are in and of themselves a product of climate change, the intensity and record-breaking nature of these events is linked to climate change.⁵

Rising sea surface temperatures and atmospheric water vapor are expected to increase hurricane intensity and rainfall.⁶ Sea level rise, caused almost exclusively by melting glaciers and warming oceans, can also lead to more damaging hurricanes and increased flooding.⁷

Climate change will also increase the likelihood of droughts due to decreasing precipitation and increasing evaporation.⁸

Public Health Impacts

Human health is threatened by climate change. Health effects can occur directly due to changes in temperature or increased occurrence and intensity of heat waves, floods, droughts and wildfires. Indirectly, health may be damaged by ecological disruptions brought on by climate change, such as crop failures or displacement of populations following prolonged drought.⁹

Higher summer temperatures can substantially harm public health, primarily through heat stress, higher concentrations of air pollutants and the spread

of emerging tropical diseases.¹⁰ The Center for Disease Control reports over 600 people die annually from extreme heat, while thousands of others are hospitalized.¹¹

The Cost of Climate Change

While the economic cost of climate change will vary across regions, we know it will increase income inequality.¹² Since 1980, 212 weather and climate disasters reached or exceeded \$1 billion in overall damages. The total cost of these events is over \$1.2 trillion. To date, 2005 was the costliest due to several tropical cyclones, and 2012 was the second most costly due to the extreme U.S. drought and Superstorm Sandy driving the losses.¹³ The cost of extreme weather events in 2017 are poised to exceed any previous year, due to record-breaking storms, forest fires and heatwaves.

Take Action

We know the solution to reducing the impacts of extreme weather is to transition off fossil fuels as quickly as possible and no later than 2035. The Off Fossil Fuels for a Better Future Act (the OFF Act) does exactly that. The OFF Act charts a path for the United States to achieve 100 percent clean renewable energy by 2035, requires 100 percent zero-emission vehicle sales by 2035, ends oil and gas subsidies, and prioritizes environmental justice.

Tell your member of Congress to support the OFF Act today: <https://fwaction.us/OffActPetition>



Endnotes

- 1 Mitchell, Daniel et al. "Attributing human mortality during extreme heat waves to anthropogenic climate change." *Environmental Research Letters*. Vol. 11. July 8, 2016; Hsiang, Solomon et al. "Estimating economic damage from climate change in the United States." *Science*. Vol. 356. June 30, 2017 at 1369; Whiteman, Gal et al. "Vast costs of Arctic change." *Nature*. Vol. 499. July 25, 2013.
- 2 Schär, Christoph. "The worst heat waves to come." *Nature Climate Change*. Vol. 6. February 2016 at 128 to 129.
- 3 Pachauri, Rajendra K. et al. Intergovernmental Panel on Climate Change. "Climate Change 2014: Synthesis Report." 2015 at 54, 65, 69 and 97.
- 4 Melillo, Jerry M. et al. U.S. Global Change Research Program. "Climate Change Impacts in the United States: The Third National Climate Assessment." 2014 at 1, 152 and 162 to 163.
- 5 Meehl, Gerald A., and Claudia Tebaldi. "More intense, more frequent, and longer lasting heat waves in the 21st Century." *Science*. Vol. 305. August 13, 2004 at 994; Villarini, Gabriele and Gabriel A. Vecchi. "Projected increases in North Atlantic tropical cyclone intensity from CMIP5 models." *American Meteorological Society*. Volume 26. October 24, 2012 at 3231, 3234 and 3238; Abatzoglou, John T. and A. Park Williams. "Impact of anthropogenic climate change on wildfire across western US forests." *Proceedings of the National Academy of Science*. Vol. 113, No. 42. October 18, 2016 at 11770; Launder, Brian and Kerry Emanuel. "Using physics to predict the effect of climate change on hurricanes." *Proceedings of the Eighth International Symposium on Turbulence Heat and Mass Transfer*. 2015 at 1.
- 6 Trenberth, Kevin. "Uncertainty in hurricanes and global warming." *Science*. Vol. 308. June 17, 2005 at 1753 to 1754.
- 7 Meier, Mark F. et al. "Glaciers dominate eustatic sea-level rise in the 21st Century." *Science*. Vol. 317. August 24, 2007 at 1064; Mousavi, Mir Emad et al. "Global warming and hurricanes: The potential impact of hurricane intensification and sea level rise on coastal flooding." *Climatic Change*. Vol. 104. 2011 at 575.
- 8 Dai, Aiguo. "Increasing drought under global warming in observations and models." *Nature Climate Change*. Volume 3. January 2013 at 52 and 57 to 58.
- 9 Woodward, Alistair et al. "Climate change and health: On the latest IPCC report." *The Lancet*. Vol. 383, No. 9924. April 5, 2014 at 1185.
- 10 Diem, Jeremy E., Christine E. Stauber and Richard Rothenberg. "Heat in the southeastern United States: Characteristics, trends, and potential health impact." *PLoS ONE*. Vol. 12, No. 5. May 16, 2017 at 1.
- 11 Choudhary, Ekta and Ambarish Vaidyanathan. U.S. Centers for Disease Control and Prevention. "Heat stress illness hospitalizations—Environmental public health tracking program, 20 states, 2001–2010." *Morbidity and Mortality Weekly Report*. Vol. 63, No. SS13. December 12, 2014 at 1 to 10; "Heat related deaths—United States, 1999–2003." *Morbidity and Mortality Weekly Report*. Vol. 55, No. 29. July 28, 2006 at 796 to 798; "QuickStats: Number of heat-related deaths,* by sex—National Vital Statistics, United States,† 1999–2010§." *Morbidity and Mortality Weekly Report*. Vol. 61, No. 36. September 14, 2012 at 729.
- 12 Hsiang et al. (2017) at 1363 and 1369.
- 13 National Oceanic and Atmospheric Administration. National Centers for Environmental Education. "Billion-dollar weather and climate disasters: Overview (2017)." Available at www.nccdc.noaa.gov/billions/overview. Accessed September, 2017.