How Does Climate Change Impact Extreme Weather?

THE PROBLEM

Human activities like the burning of fossil fuels have rapidly built up carbon dioxide and other greenhouse gases in the atmosphere. This has resulted in a marked increase in global average air and water temperatures. Warmer temperatures create extreme weather events. These extreme weather events cause massive destruction, have a huge economic impact, and create public health crises.

HOW DO LONG-TERM CLIMATE TRENDS AFFECT WEATHER?

- 1. **Storms.** Warmer temperatures cause more evaporation, and warmer air holds more moisture. Greater precipitation is the result. Since warmer temperatures alter atmospheric circulation, storms stay in one place longer. Warmer ocean temperatures also provide more energy for hurricanes to form and intensify.
- 2. **Droughts and Fires.** Less frequent, more intense rainfall runs off the land rather than soaking in. This results in longer, more severe droughts and fire seasons.

WHAT CAN WE DO?

- 1. We must reduce fossil fuel usage and deforestation so that less carbon dioxide is released into the atmosphere. Join organizations advocating for a transition to renewable energy and hold fossil fuel companies accountable.
- 2. Adapt and prepare for extreme events to ensure that vulnerable populations are protected.



Prepared by Members of the University of Richmond Osher Special Interest Group on Addressing the Climate Crisis (2024–25)