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Fire and Rain

STEVE METZ



In the summer of 2018 a prolonged heat wave turned northern Europe brown. Sweden, Greece, and dozens of other European countries were ablaze with uncharacteristic wildfires, while states in the western U.S. experienced some of the largest fires in their history. Torrential rains flooded areas from California to Connecticut. Hurricane Florence dropped a meter of rain on the Carolinas, causing the Cape Fear River to crest at almost 19 meters (62 feet). In just the first half of 2018 there were six cataclysmic weather disasters in the U.S., each one with losses exceeding \$1 billion. And the years 2016 and 2017 were even worse (NOAA/NCEI 2018).

As if storms, drought, and wildfires weren't enough, consider other news. Levels of atmospheric carbon dioxide reached 407 parts per million in August this year, up over 20% in the past 40 years, and now higher than any time in at least the past 800,000 years. The last time atmospheric CO₂ concentrations were this high was more than three million years ago, when the temperature was 2°–3°C higher than during the pre-industrial era, and sea level was 15–25 meters higher than today (Lindsey 2018).

The effect of global warming on individual weather events is difficult to determine. Still, an emerging area of science—sometimes called “event attribution”—is rapidly advancing our understanding of the links between specific extreme events and human-caused climate change. For example, researchers estimated that “human interference in the climate system” increased

Hurricane Florence's rainfall forecast by over 50% and the storm's projected diameter by about 80 kilometers (Reed et al. 2018).

In the midst of widespread efforts to undermine the teaching of climate change science, the National Science Teachers Association has issued a new position statement, “The Teaching of Climate Change.” It calls for greater support for educators as they stand up to pressures to eliminate or de-emphasize evidence-based climate concepts. The position statement “promotes the teaching of climate change as any other established field of science.” It and other climate science resources can be found at <http://www.nsta.org/climate/>.

The events of summer 2018 warn us that climate change is not a far-off event. Global warming is real, it is caused mainly by human activity, and it is here now. Teachers must stand up for evidence-based climate science. We need to provide students with the accurate knowledge that can prepare and inspire them to take action on a personal, community, and global level.

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