

Global Warming Could Yield 50 Percent More Lightning Strikes by 2100

BY DOUGLAS MAIN 11/13/14 AT 4:04 PM

Yet another shocking thing that may become worse with climate change: lightning.

Lightning strikes could become 50 percent more common in the United States by 2100 if the world warms as much as many climate models predict, according to a study [published today](#) in the journal *Science*. “For every two strikes in 2000 there will be three in 2100,” says David Roms, a researcher at the University of California, Berkeley and a co-author on the study.

That could increase the chance for wildfires and injuries, among other implications, Roms tells *Newsweek*.

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The study began with the hypothesis that lightning would be most common in places with the most rain and the highest rate of rapidly rising, energetic storms. That may sound intuitive, but nobody had previously looked for a relationship between these two factors and lightning occurrence, Roms says. Researchers calculated the product of these two factors for thousands of locations across the U.S. and compared this value with lightning abundance.

They discovered that this value alone could predict more than three-fourths of lightning occurrence. “At first we thought it was a mistake,” Roms says. “When looking at this kind of thing”—meaning, scientific explanations for complicated meteorological phenomena—“rarely do you get relationships this good.”

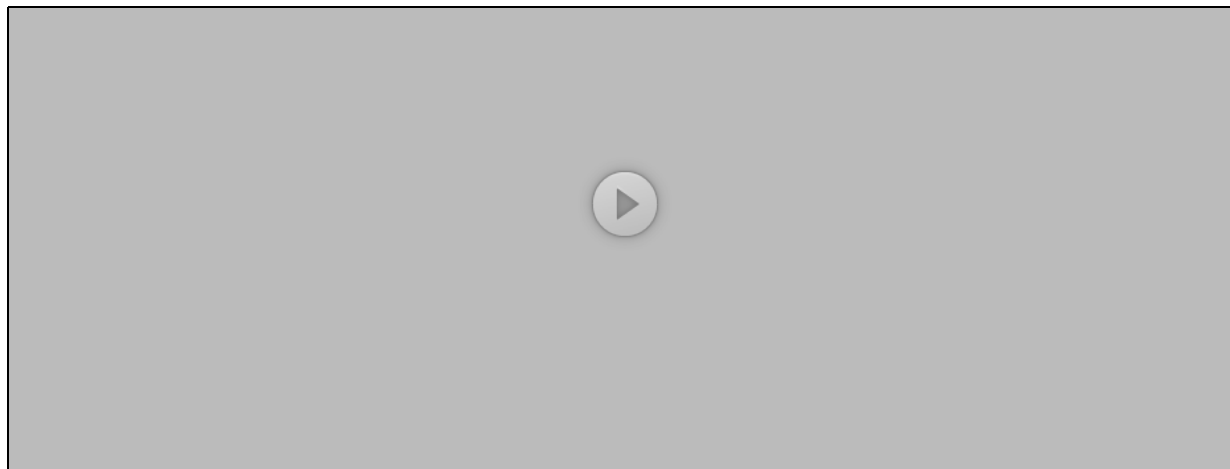
The team had stumbled upon a proxy good for “accurately predicting lightning on a daily and seasonal basis, in the future and maybe the past.”

And that, in turn, led to the realization that lightning is likely to increase in a warming world. Although this isn’t particularly surprising, it is interesting to see laid out in so clear a manner, says Jeff Weber, a scientist with the University Corporation for Atmospheric Research in Boulder, Colorado, who wasn’t involved in the research.

Lightning is created during rainstorms as warm, moist air rises, Weber explains. The collision between water and ice particles sheds electrons, which creates a charge differential between the air and the ground. Lightning happens when electricity quickly flows between the two.

The lightning finding goes hand-in-hand with recent projections that [thunderstorms are likely to become more violent](#) and produce more intense rainfalls as the globe warms, because hot air can carry more moisture and thus produce more precipitation, Weber says.

But lightning isn’t likely to become more common in places where it’s already rare, like the West Coast, where “you can count the amount of strikes per year on one hand,” Weber says. “Whereas one storm in the Midwest can spawn tens of thousands of lightning bolts.”



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