



# Scientists suspect thunderstorms as climate culprit

By Doyle Rice, USA TODAY

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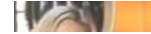


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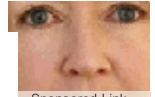
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As if there weren't enough forces spreading pollution around the planet, scientists are looking at one other contributor: thunderstorms.

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Scientists will chase thunderstorms this spring and summer in three states, in part to look at the role the storms play in pulling pollution from the surface up into the stratosphere.

The \$10 million field study, known as the "Deep Convective Clouds and Chemistry" (DC3) project, started May 15.

Through the end of June, more than 100 scientists from about 30 universities and governmental organizations are studying thunderstorms in the diverse weather environments of Oklahoma, Colorado and Alabama.

Thunderstorms act like elevators, according to the National Oceanic and Atmospheric Administration (NOAA). In what are called "updrafts," the storms suck up air and pollution (both man-made and natural) from near Earth's surface and transport it for many miles into the upper atmosphere.

By Ethan Miller, Getty Images

Lightning flashes east of the Las Vegas Strip during a thunderstorm.

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The scientists will study changes in the chemistry of the air — and the pollution — that goes into and comes out of thunderstorms, using both airplanes and ground-based equipment, according to scientist Don MacGorman of NOAA's National Severe Storms Laboratory.

In one of the key parts of the experiment, scientists are measuring how thunderstorms transport and produce chemicals that form ozone, a greenhouse gas that affects Earth's climate, air quality and weather patterns.

"We tend to associate thunderstorms with heavy rain and lightning, but they also shake things up at the top of cloud level," says Chris Cantrell, a scientist at the

National Center for Atmospheric Research (NCAR). "Their impacts high in the atmosphere have effects on climate that last long after the storm dissipates."

At any given moment, dozens or even hundreds of thunderstorms are booming somewhere in the world, says Mary Barth of NCAR. Each year in the USA, about 100,000 thunderstorms form, mostly in the spring and summer.

The three different locations were chosen because of the unique weather conditions and emission types in each state, says research scientist Owen Cooper of the University of Colorado-Boulder.

Researchers also want to get a better understanding of how thunderstorms produce lightning, MacGorman says. "It will help us learn how to use lightning mapping data to improve storm forecasts and warnings."

Contributing: The Associated Press

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