

How cities create their own clouds

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Cities are more likely to be persistently covered by clouds than rural areas thanks to unique atmospheric conditions they produce, a new study has shown.

Cities are known to create [urban heat islands](#) due to the energy released

by [human activity](#), but new research led by the University of Reading, and published in the journal *Climate and Atmospheric Science* has shown for the first time that this also creates more cloud cover during warmer months.

Analysis of London and Paris revealed that heat released gradually from buildings causes updrafts that carry moisture upwards and increases cumulus cloud cover. The researchers found that afternoon [cloud cover](#) during spring and summer is 5-10% higher than over surrounding countryside.

Dr. Natalie Theeuwes, in the University of Reading's Department of Meteorology, said: "We would expect there to be fewer clouds over cities as the comparative lack of vegetation tends to dry the atmosphere. However, detailed analysis in and near London have shown us that the heat released by buildings throughout the afternoon pushes what little moisture there is in the air upwards where it forms clouds.

"The findings reveal the increasing impact cities are having on their own mini environments."

More information: Natalie E. Theeuwes et al. Persistent cloud cover over mega-cities linked to surface heat release, *npj Climate and Atmospheric Science* (2019). [DOI: 10.1038/s41612-019-0072-x](https://doi.org/10.1038/s41612-019-0072-x)

Provided by University of Reading

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