

Climate changes make some aspects of weather forecasting increasingly difficult

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Ongoing climate changes make it increasingly difficult to predict certain aspects of weather, according to a new study from Stockholm University. The study, focusing on weather forecasts in the northern

hemisphere spanning three to 10 days ahead, concludes that the greatest uncertainty increase will be regarding summer downpours, which is of critical importance when it comes to our ability to predict and prepare for flooding.

The study, "How Global Warming Changes the Difficulty of Synoptic Weather Forecasting," by Sebastian Scher and Gabriele Messori at the Department of Meteorology, published in *Geophysical Research Letters*, establishes that our ability to make accurate weather forecasts is affected by the current changes in the global climate. A major factor is the decrease in the temperature difference between the North Pole and the equator.

In the studied span of medium-range weather forecasting (three to 10 days) the most prominent uncertainty seems to befall the ability to predict the volume of summer rain. Certain other parameters, such as temperature and air pressure, are likely to become more accurate.

"Reliable [weather forecasts](#) are tremendously important for almost all of society, and summer flooding in the [northern hemisphere](#) is one of the great challenges as the climate is getting warmer," says Sebastian Scher, main author. "It is very important that meteorological institutes around the world are given the opportunity to develop their tools and methods as conditions change."

The research project at Stockholm University will continue, during the next step specifically focusing on the ability to predict heavy summer downpours in 24 to 48 hours.

More information: S. Scher et al, How Global Warming Changes the Difficulty of Synoptic Weather Forecasting, *Geophysical Research Letters* (2019). [DOI: 10.1029/2018GL081856](https://doi.org/10.1029/2018GL081856)

Provided by Stockholm University

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