

Geoscientists insist weather forecasting is more accurate than ever and could get even better

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Credit: George Hodan/public domain

A trio of geoscientists with Pennsylvania State University and the Massachusetts Institute of Technology has published an update in the

journal *Science* on the state of weather forecasting. In their paper, Richard Alley, Kerry Emanuel and Fuqing Zhang report statistics demonstrating the increased accuracy of weather forecasting, and their views on where the field is headed.

Most people have a love-hate relationship with their local weather forecaster—when they are right, we carry on as best we can given conditions outside. But when they are wrong, we cast aspirations on their character and wonder why we listen to them at all. But weather forecasters have become more accurate, the authors claim, noting that today, a five-day [forecast](#) is as accurate as a one-day forecast was as recently as 1980. And a 72-hour hurricane warning today is more accurate than a 24-hour warning was 40 years ago. It is also far more accessible. Not very long ago, we had to wait for the morning paper or the evening news to get our report, but now we can fire up a phone app and get not just a forecast, but up-to-the-minute radar images of moving storms.

The researchers point out the improvements are mostly due to technology. They note that the same basic tools are used for forecasting, but improvements to those tools have made results far more impressive. Foremost among them are improvements in computer hardware and software. They also point out that forecasting is more than just predicting rain or snow, it also includes things like hints on which way forest fires will move, how much ice will melt in the Arctic, or how much the sea will rise, leading to flooding in the future. It is also playing an increasingly larger role in helping people plan renewable energy projects.

Looking to the future, the authors offer a generally sunny forecast. As computers and weather models improve, so will the forecasts they offer. But they also note there is a catch—[weather](#) forecasting costs more than it used to, so it is important that investments by both government and

private entities continue or even increase. Also, important is data sharing between entities, particularly between different countries. Accurate data, they note, will only benefit everyone.

More information: Richard B. Alley et al. Advances in weather prediction, *Science* (2019). [DOI: 10.1126/science.aav7274](https://doi.org/10.1126/science.aav7274)

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