

Northeast farmers weigh warming climate, drenched fields

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Farmers in the Northeast are adapting to longer growing seasons and warming climate conditions - but they may face spring-planting whiplash as they confront fields increasingly saturated with rain, according to a research paper published in the journal *Climatic Change*.

"Climate change can easily intensify agricultural susceptibility, but also presents fresh, surprising opportunities," said David Wolfe, professor of plant and soil ecology at Cornell University and senior author of the [paper](#).

For the past two decades, the Northeast has been getting warmer for longer periods of time. It also has seen a 71 percent increase in the frequency of extreme precipitation events - more than any other region in the United States, according to the paper. Heavy rainfall, for example, increases the likelihood of diseases such as potato and tomato late blight, along with plant-root fungal problems that stress carrots and other root vegetables.

"Heavy rains not only cause disease problems, but can prevent farmers from having access to the fields to plant in spring or to harvest in fall," Wolfe said.

While warmer temperatures expand the agricultural production season, [climate](#) change warms oceans and creates a more energetic atmosphere. This, in turn, brings more rainfall, said Art DeGaetano, professor of climatology and director of the Northeast Regional Climate Center at

Cornell. Such rainfall extremes are projected to continue through the current century, according to the paper.

For several years, the researchers examined the rainfall three weeks prior to the last frost. "The date of the last frost in the spring gets earlier and earlier. But that pushes you against the time when [rainfall](#) increases the most," said DeGaetano.

Fresh market vegetable grower profit is based on reaching markets early, when the crop's value is greatest. Delayed planting due to wet spring soils can have negative financial effects. Farmers can try planting a field even when it is wet, but using heavy farm equipment compacts soil and decreases its ability to hold water, diminishing yield potential.

The paper, "Unique Challenges and Opportunities for Northeastern U.S. Crop Production in a Changing Climate," is part of a special issue of the journal *Climatic Change*, titled "Vulnerability Assessment of U.S. Agriculture and Forests developed by the U.S. Department of Agriculture Climate Hubs."

More information: David W. Wolfe et al. Unique challenges and opportunities for northeastern US crop production in a changing climate, *Climatic Change* (2017). [DOI: 10.1007/s10584-017-2109-7](https://doi.org/10.1007/s10584-017-2109-7)

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