

Researchers conduct first-ever study of cultural adaptation to climate change

October 30 2023



Credit: CC0 Public Domain

As the impacts of climate change grow, society and people struggle to adapt to the challenges of the new reality. Change, however, is difficult, and adapting to new ways of life or new ways of doing business often requires a change in culture.

To determine how [culture](#) and society adapt to a changing climate, a

team of researchers from the University of Maine and the University of Vermont (UVM) have conducted the first-ever study of cultural adaptation to climate change. Using the science of cultural evolution to examine data on which crops [farmers](#) plant across the U.S., their work can help inspire more effective policy solutions to survive in the face of the harmful effects of global warming.

Tim Waring, associate professor with the UMaine Senator George J. Mitchell Center for Sustainability Solutions and the School of Economics, spearheaded the project.

"Adaptation is about finding a better match to the environment. We know that humans evolve and adapt by changing their culture," Waring says. "But we know very little about if or how culture is adapting to ongoing climate change today."

In [their paper](#), published in the *Philosophical Transactions of the Royal Society B*, Waring and his colleagues define cultural adaptation as a population-level change, or the spread of a behavior that provides a benefit in a changed environment.

"There are three ingredients for adaptation," says Waring, "a new practice, which provides a benefit, and then spreads."

With these criteria, researchers compared the climate in which different crops grow best to the actual climate, using data on crops planted in each county across the U.S. for the last 14 years. They found that for much of the U.S., farmers have changed which crops they plant in a way that better matches crops to recent changes in climate.

Studying cultural adaptation to climate change can improve research because it enables more rigorous comparisons to show where adaptation is happening.

For example, in Maine, northern and western counties have changed crops in a way that follows recent climate change. But the researchers found that crop adaptation to climate change is not happening everywhere. In some regions, planted crops have become even less suited to climate change.

"Our research shows that many Maine farmers are already adapting to climate change. They always have. That's what farmers do," Waring says.

This new culture-based approach to climate adaptation can also provide insight to policymakers by distinguishing the process of adaptation from policy goals and beneficial outcomes for society.

For example, the team also explored whether climate change influenced the use of cover [crops](#) in the U.S. They concluded that the recent surge in cover cropping may be due to cultural adaptation, but just not to [climate change](#). Instead, many farmers are adapting their practices to take advantage of financial incentives for cover cropping.

"This shows why understanding cultural adaptation is so important. Adaptation is a powerful force, but we need to aim it at the problems we want to solve," says Waring. "This approach opens a new frontier in [climate](#) adaptation research and policy. We are only just getting started."

More information: Timothy M. Waring et al, Operationalizing cultural adaptation to climate change: contemporary examples from United States agriculture, *Philosophical Transactions of the Royal Society B: Biological Sciences* (2023). [DOI: 10.1098/rstb.2022.0397](https://doi.org/10.1098/rstb.2022.0397)

Provided by University of Maine

Citation: Researchers conduct first-ever study of cultural adaptation to climate change (2023, October 30) retrieved 28 April 2024 from <https://phys.org/news/2023-10-first-ever-cultural-climate.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.