

Recent warmer winters may be cooling climate change concern

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A composite image of the Western hemisphere of the Earth. Credit: NASA

The vast majority of Americans have experienced more favorable weather conditions over the past 40 years, researchers from New York University and Duke University have found. The trend is projected to reverse over the course of the coming century, but that shift may come too late to spur demands for policy responses to address climate change.

The analysis, published in the journal *Nature*, found that 80 percent of Americans live in counties where the weather is more pleasant than four decades ago. Winter temperatures have risen substantially throughout the United States since the 1970s, but summers have not become markedly more uncomfortable. The result is that weather has shifted toward a temperate year-round climate that Americans have been demonstrated to prefer.

"Rising temperatures are ominous symptoms of global [climate change](#), but Americans are experiencing them at times of the year when warmer days are welcomed," explains Patrick J. Egan, an associate professor in NYU's Wilf Family Department of Politics who authored the study with Duke's Megan Mullin.

However, he and Mullin, an associate professor at Duke's Nicholas School of the Environment, discovered a looming shift in these patterns when they used long-term projections of temperature changes to evaluate future weather Americans are likely to experience. According to these estimates, nearly 90 percent of the U.S. public may experience weather at the end of the 21st century that is less preferable than weather in the recent past.

"Weather patterns in recent decades have been a poor source of motivation for Americans to demand policies to combat the climate change problem," observes Mullin. "But without serious efforts to reduce greenhouse gas emissions, year-round climates ultimately will become much less pleasant."

In a 2012 study, the duo found that local weather temporarily influences people's beliefs about evidence for global warming. That research, which appeared in the *Journal of Politics*, found that those living in places experiencing warmer-than-normal temperatures at the time they were surveyed were significantly more likely than others to say there is evidence for global warming.

In the *Nature* study, Egan and Mullin took a broader approach to understanding weather patterns—and how Americans experience them. The researchers analyzed 40 years of daily weather data (from 1974 through 2013) on a county-by-county basis to evaluate how the population's experience with weather changed during this period, which is when climate change first emerged as a public issue.

They found that Americans on average have experienced a steep rise in January maximum temperatures—an increase of 1.04 °F per decade (0.58 °C). By contrast, daily maximum temperatures in July rose by only 0.13 °F per decade (0.07 °C). Moreover, humidity in the summer has declined somewhat since the mid-1990s. In other words, [winter temperatures](#) have become warmer for virtually all Americans while summer conditions have remained relatively constant.

To quantify how Americans are evaluating these changes, Egan and Mullin drew upon research by economists examining weather's role in growth of the Sun Belt and population declines in the Northeast and Midwest. Using these findings, they developed a metric of the average American's preferences about weather. This "weather preference index" (WPI) reflects the U.S. public's preferences for places with warmer temperatures in winter and cooler temperatures and lower humidity in summer. The index also takes into account preferences about precipitation. Egan and Mullin found that WPI scores have risen in counties accounting for 80 percent of the U.S. population since the 1970s.

But projections of future temperatures—and future WPI scores—offer a markedly different picture. Climate change models predict that under all potential levels of future warming, average summer temperatures will ultimately rise at a faster rate than winter temperatures. Using these projections, the researchers calculated that under a severe warming scenario, WPI scores will decline such that an estimated 88 percent of the U.S. public will experience less pleasant [weather](#) at the end of this century than it has in the past 40 years.

More information: *Nature*, [DOI: 10.1038/nature17441](https://doi.org/10.1038/nature17441)

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