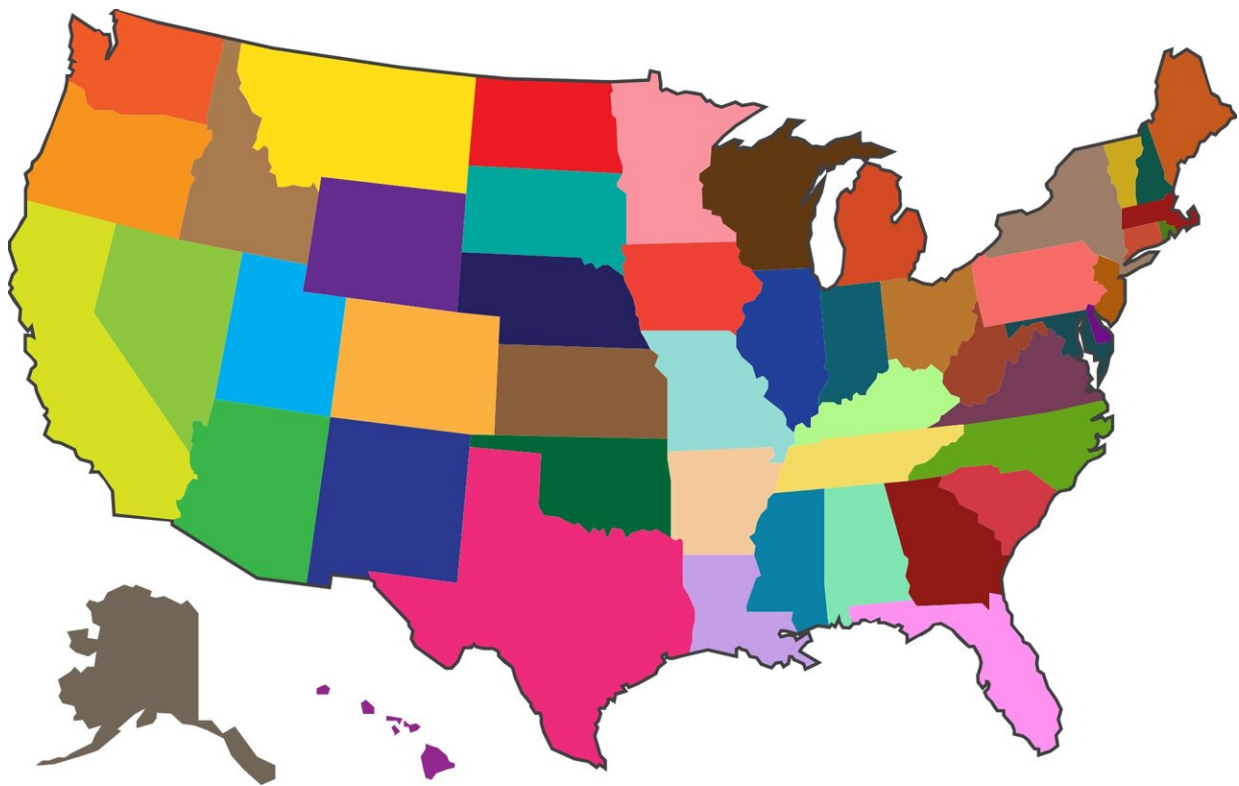


# New map shows how climate change affects your community and its vulnerability to weather

October 12 2023, by Noor Adatia, The Dallas Morning News

---



Credit: Pixabay/CC0 Public Domain

Across the globe, the past few years have been characterized by scorching summers that endanger the health of outdoor workers and biting winters that often freeze pipes and other critical infrastructure.

During the February 2021 freeze, nearly 250 Texans died and millions were left without power and water. Unrelenting heat waves this summer resulted in heat-related deaths and knocked out power, leaving many without air conditioning.

In order to better understand what communities are most affected by the impacts of climate change, researchers from the Environmental Defense Fund and Texas A&M University recently collaborated on a project to illustrate how climate threatens neighborhoods across the United States.

The [Climate Vulnerability Index](#)—a comprehensive tool that analyzed more than 70,000 tracts in the U.S.—allows people to search by location and learn what conditions shape their level of vulnerability. The study examined 184 indicators, including health, social economic impact, environment, extreme weather events and infrastructure, to draw its conclusions.

"We created this tool, the CVI, the climate vulnerability index because we wanted to understand where the most disadvantaged communities are across the nation," Grace Lewis, a health scientist at EDF said adding the tool is a "scientific approach" to learning about the root of climate vulnerability.

For example, the health factor included data on the number of adults diagnosed with long-term health conditions, the number of infectious diseases as well as access to affordable care. It took scientists about a year to conduct their research and collate the data onto a map.

Lewis said this national tool initially came out of a research project in Houston that assessed the city's vulnerability to climate change. After realizing the benefit of a tool like this, scientists and economists embarked on a larger project to make this data available to everyone in the country.

Another goal for the project is to help underserved communities secure funding from the bipartisan infrastructure law and the Inflation Reduction Act, according to a statement released by EDF earlier this month. The IRA is a climate and clean-energy bill signed by President Joe Biden last fall.

"I think we've got this historic opportunity, and we can't let it pass us by," Lewis said. "We need to think forward also about how we [invest] in electric vehicles and charging stations and energy."

Lewis said she hopes the map serves as a "wake-up call" to city planners and other decision-makers on how to build more resilient and sustainable communities.

## **Where does Texas rank?**

Out of all 50 states plus the District of Columbia, Texas ranked No. 8 for overall climate vulnerability, placing it among the most vulnerable states.

The main drivers behind this ranking include poor chronic-disease prevention, an abundance of food deserts and poor land use. When it comes to climate change impact, Texas ranked high in vulnerability for the costs of climate disasters, flooding and economic and productivity losses.

The darker-colored areas on the map indicate places of higher climate vulnerability, while the lighter-colored regions indicate lower vulnerability. Texas is a larger, heterogenous state that has pockets of both, said one of the study's researchers, Dr. Weihsueh A. Chiu, who is also a professor at A&M's veterinary school.

This type of shading indicates a pattern found across the U.S. that is

linked to the socio-economic standing of different neighborhoods, Chiu explained. Affluent areas, which tend to have better health care and more robust infrastructure, can respond more easily to climate disasters, resulting in a lower vulnerability score. Meanwhile, less affluent areas, home to more factories and poor infrastructure, tend to rank higher in terms of their climate vulnerability.

"Climate then becomes an equity issue because those communities are less able to respond to these new emerging threats from climate change," he said, adding many low-income areas lack the financial resources and proper infrastructure to help them in the face of climate threats.

Unlike other climate screening tools, the CVI map accounts for infrastructure in addition to health and climate. Lewis said many maps illustrating the effects of climate change take into account two factors; it's typically rare for trackers to examine the intersection of health, environment, climate and infrastructure.

"We take a very holistic and broad view of [vulnerability](#) and recognize those infrastructures, social determinants of health," she said. "They play a really important role in a community's ability to be adaptable."

The data indicates that the country's 10 most vulnerable counties are in the South, with several in Louisiana and Mississippi. St. John the Baptist, a parish in Louisiana, ranked as the most vulnerable county in the U.S.

However, Lewis said she hopes people see the map as a way to instill positive change into their communities, rather than dwell on the negatives of climate change.

"What areas do we need to fortify in order to foster resilience, because we know that climate is really having an immense impact?" she said.

She said she hopes people recognize from the study that [climate change](#) does not operate in a vacuum; instead, [health](#) and environmental factors work together with [climate](#) to impact a community's well-being.

2023 The Dallas Morning News. Distributed by Tribune Content Agency, LLC.

Citation: New map shows how climate change affects your community and its vulnerability to weather (2023, October 12) retrieved 28 April 2024 from <https://phys.org/news/2023-10-climate-affects-community-vulnerability-weather.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.