

THE SOUTHEAST TEXAS 1 KILOMETER CLIMATE ATLAS



An interactive tool for exploring high-resolution future climate projections tailored to Southeast Texas

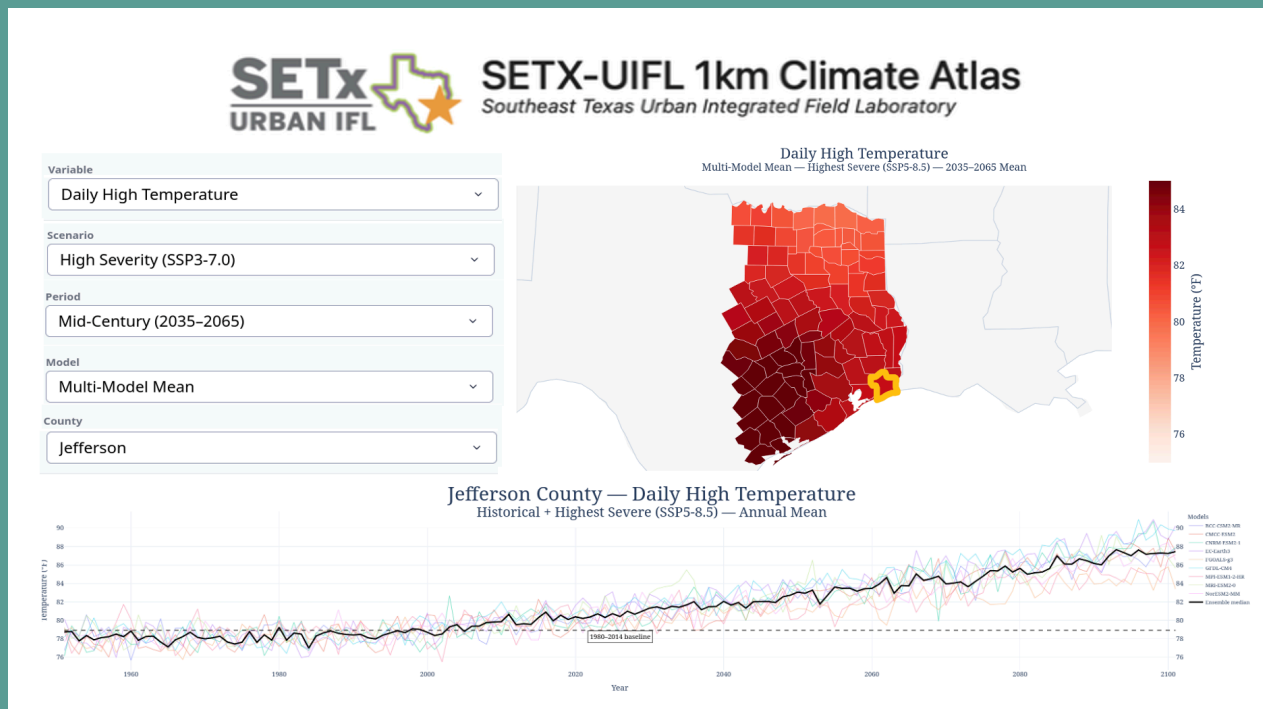
WHY NOW?

Changing weather patterns are already making natural disasters worse in Southeast Texas, but most information on how these patterns may change in the future is too general for the community to use to build local resilience. We have built a new high-resolution 1 km dataset of future weather conditions tailored specifically for Southeast Texas. This Climate Atlas lets potential users in the community get a quick look at the dataset and generate visualizations that can spark continued collaboration and coordination to ensure Southeast Texas can thrive as conditions change.

WHAT WE DID

Researchers at SETx-UIFL developed a new high-resolution dataset at 1-kilometer spatial resolution covering future weather conditions across Southeast Texas. The Climate Atlas translates this dataset into an accessible, browser-based interactive tool. Users can generate localized maps and visualizations of projected changes in heat, humidity, and winds, at the county level, and compare future extremes to historical regional baselines. No advanced technical background is required to use the tool.

Example of visualization for Jefferson County



WHO WAS INVOLVED?

The Climate Atlas was developed as part of the broader SETx-UIFL collaboration, which actively engages community members and partner institutions across Southeast Texas. Input from community partners shaped the decision to present data at a resolution and scale that is useful for local decision-making. Users can use the visualizations generated to understand where more detailed analysis could be helpful or to start conversations on how to build resilience given expected changes.

HOW TO USE IT

The Atlas is available at <https://www.jsg.utexas.edu/PersadLab/SETxClimateAtlas> and runs entirely in your internet browser. No advanced computer background is required; the Atlas is structured to guide users through the analysis step-by-step. It provides interactive projections for heat stress, humidity, and wind patterns through 2100. County-level maps reveal spatial variation in projected impacts, allowing communities to identify where risks are greatest. Finally, the Atlas enables users to identify areas where more detailed local analysis would be beneficial and where resilience planning is most urgent.

MORE ABOUT SETX-UIFL

The Southeast Texas Urban Integrated Field Lab (SETx-UIFL) is one of four projects funded in 2022 by the U.S. Department of Energy to study how climate, environment, and urban changes affect cities. A team of over 80 researchers from UT, Lamar University, Texas A&M, Prairie View A&M, Oak Ridge National Lab, and Los Alamos National Lab has collected data and conducted modeling across hazards including flooding, hurricanes, heat stress, and air quality. Our Why: Southeast Texas faces numerous hazards, yet smaller communities like this one have often felt forgotten compared to larger cities. The SETx-UIFL was designed to explore the complex dynamics of disaster vulnerability for this economically and culturally vibrant region. We believe Southeast Texas is a bellwether for the entire Gulf Coast, and an exemplar for strategies that protect people and places. We hope this effort supports your path toward lasting resilience.



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