

Monthly Attribution Overview May 2025

An analysis of how climate change boosted United States temperatures in May 2025

Using Climate Central's Climate Shift Index (CSI) tool to measure the impact of climate change on daily temperatures across the United States, as well as NOAA's Applied Climate Information System (ACIS) to find daily temperature information, we have compiled a high-level overview of how climate change has affected temperature trends in May in cities across the United States. ([Dataset downloadable as Excel workbook here.](#))

1. High Level Findings

- **The U.S. saw generally moderate temperatures in May with an average anomaly of 0.1°F** across 192 cities. A slight majority — 102 cities — experienced cooler-than-average temperatures.
- **24 cities (12% of stations) recorded one of their top 10 warmest May monthly temperatures** on record (average stations have data reaching back to 1893).
- **Elevated Climate Shift Index values** were notable across the **Southwest, South, and Southeast**. 35 Cities experienced at least a week of CSI values greater than or equal to 2, indicating a strong climate change influence.
- **Long-term May warming** trends show that **nearly all cities** analyzed **have gotten warmer since 1970**, consistent with findings from our [2025 Spring Package](#).

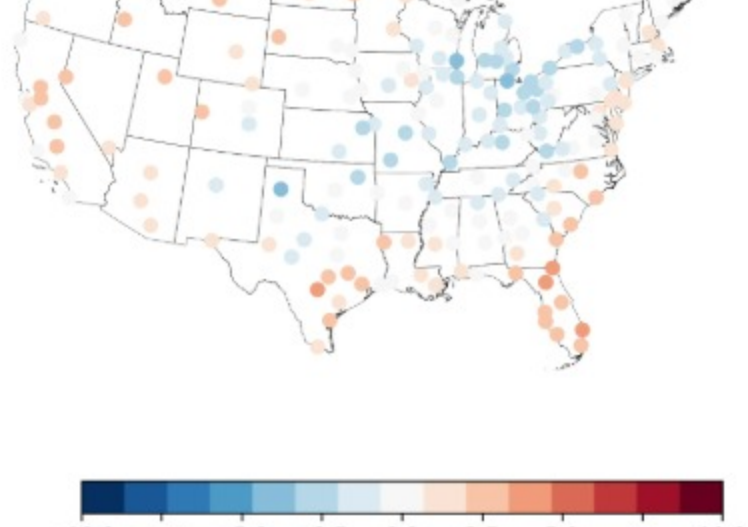


Figure 1. Threaded ACIS temperature anomalies for May 2025 relative to the 1991-2020 standard normal period. Analysis based on ACIS data.



Figure 2. Days with a CSI of 2 or higher for May 2025 for ACIS threaded stations. Analysis based on ERA5 data (5/01 - 5/28) and GFS data (5/28-5/31).

2. Local Temperature Anomaly Analysis

- On average, cities analyzed had moderate temperatures in May. **The average temperature anomaly across the 192 cities analyzed was 0.1°F**, with a minority — 90 cities — having warmer-than-average temperatures.
- Temperatures were moderately warm along the East and West coasts, the northern Great Plains, and the Gulf of Mexico Coast. The Midwest and the southern Great Plains saw slightly cooler-than-average conditions.
- The most unusually warm city this May was **San Antonio, TX**, which was **3.98°F** warmer than usual.
- Of the 191 ACIS stations analyzed, 185 showed positive temperature trends for May, indicating that these **cities have been warming on average since 1970**.
- **Reno, Nevada**, warmed the most out of all the analyzed cities. The average May in Reno is **7.2°F warmer** than it was in 1970.

City	State	Temperature Anomaly (°F)	Average Temperature (°F)	Warming Since 1970 (°F)
San Antonio	TX	3.98	80.48	4.2
Great Falls	MT	3.75	55.26	-1.6
Jacksonville	FL	3.73	78.63	2.3
West Palm Beach	FL	3.51	82.21	2.7
Gainesville	FL	3.43	78.44	0.8
Helena	MT	3.42	57.37	3.0
Houston	TX	3.26	80.61	4.7
Rapid City	SD	3.26	57.37	-1.4
Orlando	FL	3.24	80.58	1.9
Tampa	FL	3.15	82.60	4.3

Table 1. Top 10 ACIS stations with the highest May 2025 temperature anomaly.

City	State	Warming Since 1970 (°F)	Temperature Anomaly (°F)	Average Temperature (°F)
Reno	NV	7.2	2.68	63.03
El Paso	TX	6.9	0.71	76.11
Chattanooga	TN	5.6	-0.94	69.06
Albany	GA	5.5	1.56	76.85
Las Vegas	NV	5.3	1.60	78.90
Medford	OR	5.3	1.61	62.02
Tucson	AZ	5.3	0.73	77.53
Huntsville	AL	5.1	-0.85	70.50
Wheeling	WV	4.9	-1.56	59.69
Louisville	KY	4.8	-1.46	66.79

Table 2. Top 10 ACIS stations with the fastest warming May since 1970.

3. Local Climate Shift Index Analysis

- Honolulu, Hawaii had 21 days at CSI 5, indicating that temperatures on those days were made at least five times more likely because of climate change.
- **35 cities across the country experienced at least a week of days at or above a CSI of 2.**
- On average, cities in the West experienced the highest number of days (7.2) with a CSI of 2 or above.
- Even though San Juan had a negative temperature anomaly — meaning it was cooler than the 1991–2020 average — it still experienced one of the highest numbers of days with a Climate Shift Index (CSI) of 2 or higher.
 - This is because temperature anomalies are measured relative to recent climate norms (1991–2020), while the CSI reflects how much warmer conditions are compared to pre-industrial times. So, while San Juan may have felt cooler relative to recent decades, it was still significantly warmer than a typical pre-industrial May.

City	State	Days at CSI = 2 or higher	Days at CSI = 5	Average Temperature (°F)	Temperature Anomaly (°F)
Honolulu	HI	31	21	80.23	2.08
San Juan	PR	26	11	81.19	-0.35
Fort Myers	FL	22	15	82.02	2.72
West Palm Beach	FL	21	17	82.21	3.51
Tampa	FL	20	8	82.60	3.15
Sarasota	FL	20	15	80.10	2.25
Miami	FL	19	15	82.37	2.32
Gainesville	FL	17	5	78.44	3.43
Anchorage	AK	15	1	47.52	-0.63
Victoria	TX	15	13	78.95	1.71
San Antonio	TX	14	6	80.48	3.98

Table 3. Top 10 ACIS stations with the highest number of days at or above a CSI of 3 during May 2025.

METHODS

Calculating the Climate Shift Index

All Climate Shift Index (CSI) levels reported in this brief are based on daily average temperatures and [ERA5 data](#). See the [frequently asked questions](#) for details on computing the Climate Shift Index, including a summary of the multi-model approach described in [Gilford et al. \(2022\)](#).

City Analysis

We analyzed 191 Applied Climate Information System (ACIS) stations associated with U.S. cities. For each city, we found the CSI time series from the nearest 0.25° grid cell. We calculated the number of days at CSI levels 2, 3, 4, and 5. We used ACIS data to find the average monthly temperatures, temperature anomalies, and precipitation information, and to derive average monthly warming trends for each city.

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