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Active 2025 Hurricane Season With 56% Caribbean and 51% U.S. Landfall Odds Predicted by CSU

The season is forecast to bring 17 storms and nine hurricanes, with conditions resembling 2017. Warm waters and neutral ENSO support heightened activity. Major hurricane landfall risks are above average for both the U.S. and the Caribbean.

Hurricane Season / **Published On April 09, 2025 05:26 AM /**

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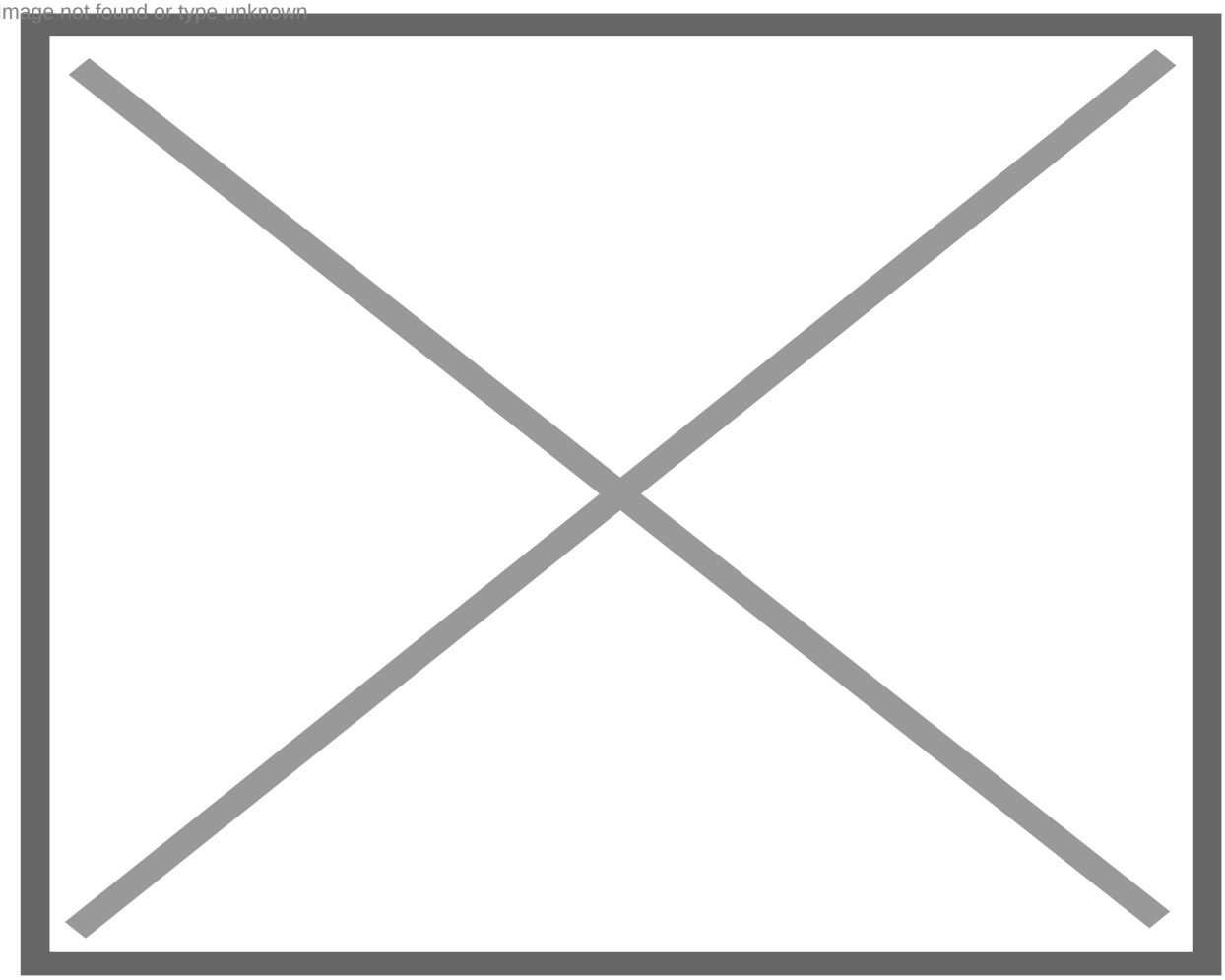

A gas station in St. Thomas during Hurricane Irma in 2017. By. V.I. CONSORTIUM

Researchers at Colorado State University are forecasting a notably active Atlantic hurricane season for 2025, driven by warmer-than-average ocean temperatures and favorable atmospheric conditions. The initial outlook anticipates 17 named storms, nine hurricanes, and four major hurricanes forming during the official season from June 1 to November 30.

The report was presented during the National Tropical Weather Conference in Miami, Florida, where CSU researchers, along with meteorologists and emergency management professionals, gathered to discuss the upcoming season. This is the 42nd year CSU has issued its seasonal hurricane forecast, a program launched by the late Professor Emeritus Bill Gray in 1984.

According to the CSU team, the prediction is based on a combination of statistical modeling and analysis of large-scale atmospheric and oceanic indicators. The models take into account up to four decades of historical data and integrate inputs from global meteorological agencies including the European Centre for Medium-Range Weather Forecasts, the UK Met Office, the Japan Meteorological Agency, and the Centro Euro-Mediterraneo sui Cambiamenti Climatici.

At the heart of the 2025 outlook is the presence of above-normal sea surface temperatures across the subtropical eastern Atlantic Ocean and Caribbean Sea. These warmer waters are expected to persist into the peak of the hurricane season, contributing to favorable conditions for storm development.

“When waters in the eastern subtropical Atlantic are much warmer than normal in the spring, it tends to force a weaker subtropical high and associated weaker winds blowing across the tropical Atlantic,” the report explains. These weaker winds allow for a more unstable atmosphere and lower surface pressure, both of which enhance the probability of hurricane formation and intensification.

Lead author and senior research scientist Phil Klotzbach noted that this year’s seasonal indicators bear similarities to previous seasons such as 1996, 1999, 2006, 2008, 2011, and 2017. “Our analog seasons ranged from having slightly below-average Atlantic hurricane activity to being hyperactive,” said Klotzbach. “While the average of our analog seasons was above normal, the large spread in observed activity in our analog years highlights the high levels of uncertainty that typically are associated with our early April outlook.”

El Niño Unlikely, Favorable Winds Expected

Another key factor in the forecast is the status of the El Niño-Southern Oscillation (ENSO). While weak La Niña conditions are currently present in the Pacific, forecasters expect ENSO-neutral conditions to emerge over the coming months. The likelihood of El Niño forming during the peak of the Atlantic hurricane season (August through October) is considered low—just 13% according to the latest NOAA outlook.

Historically, El Niño leads to increased upper-level westerly winds across the Caribbean and Atlantic, creating vertical wind shear that disrupts storm formation. With such conditions unlikely in 2025, upper-level winds are expected to remain hurricane-friendly.

The CSU team has projected hurricane activity in 2025 will reach approximately 125% of the average season from 1991–2020. For comparison, activity in 2024 was recorded at 130% of the average. Last year’s most destructive storms—Hurricanes Helene and Milton—were responsible for over 250 deaths and more than $120 billion in damages across the southeastern United States.

In addition to traditional forecasting metrics, CSU has again included the Accumulated Cyclone Energy (ACE) west of 60°W, a metric introduced in 2023. This refined measurement emphasizes storm frequency, intensity, and duration specifically in the western Atlantic Basin—home to nearly all hurricane-prone landmasses. In 2025, the ACE west of 60°W is expected to be high due to the neutral or La Niña ENSO conditions, which are more conducive to landfalling storms in the

region.

The forecast includes the following landfall probabilities for major hurricanes in 2025:

- 51% for the entire U.S. coastline (historical average: 43%)
- 26% for the U.S. East Coast including Florida peninsula (historical average: 21%)
- 33% for the Gulf Coast from the Florida panhandle to Brownsville, Texas (historical average: 27%)
- 56% for the Caribbean (historical average: 47%)

In addition to these percentages, the report also provides tailored probabilities of tropical cyclone activity within 50 miles of counties, parishes, and hurricane-prone regions throughout the U.S., Mexico, Central America, Canada, and the Caribbean.

Forecast Summary and Seasonal Outlook

Here is a summary of CSU's forecast for the 2025 Atlantic hurricane season compared to the 1991–2020 average:

- Named Storms
  • 1991–2020 Average: 14.4
  • 2025 Forecast: 17
- Named Storm Days
  • 1991–2020 Average: 69.4
  • 2025 Forecast: 85
- Hurricanes
  • 1991–2020 Average: 7.2
  • 2025 Forecast: 9
- Hurricane Days
  • 1991–2020 Average: 27.0
  • 2025 Forecast: 35
- Major Hurricanes (Category 3 or higher)
  • 1991–2020 Average: 3.2
  • 2025 Forecast: 4

- Major Hurricane Days
  • 1991–2020 Average: 7.4
  • 2025 Forecast: 9

CSU will issue three additional updates to this forecast throughout the season: on June 11, July 9, and August 6.

Preparedness Encouraged Despite Seasonal Uncertainty

While the forecast suggests an active season, researchers are clear that seasonal projections cannot pinpoint when or where hurricanes will strike. The team emphasizes the need for preparedness regardless of the forecast.

“It takes only one storm near you to make this an active season for you,” said Professor Michael Bell, one of the co-authors of the report. The report reminds residents across coastal regions and hurricane-prone territories to stay informed and take appropriate precautions as the season approaches.