Howden Re

Pre-season hurricane outlook for 2025

Understanding the 2025 pre-season hurricane outlook

The 2025 Atlantic hurricane season, which begins on June 1st and ends on November 30th, is projected to have above-average activity. Colorado State University (CSU) forecasts 17 named storms, nine of which are expected to develop into hurricanes and four to reach major hurricane status (Category 3 or higher). This anticipated activity represents about 125% of the average observed between 1991 and 2020.

This elevated activity is driven, in part, by unusually warm Atlantic Sea Surface Temperatures (SSTs), which provide necessary fuel for storm development and intensification. Warmer ocean waters offer more energy for storms to grow stronger and sustain themselves. Additionally, ENSO is currently in a neutral phase, and forecast to stay neutral through the season. Historically, this phase leads to somewhat heightened hurricane activity, though not as strong as La Niña. There is broad agreement among major forecasting groups, including NOAA, Tropical Storm Risk (TSR), and CSU, that these conditions indicate increased activity.

Notably, the ECMWF's (European Centre for Medium-Range Weather Forecasts) seasonal AI-enhanced model, which performed exceptionally well in 2023 and 2024, is also signaling an active season, adding confidence to the consensus outlook.

Several thermodynamic and large-scale drivers are converging to support this above-average outlook. Anomalously warm tropical Atlantic Sea Surface Temperatures (SST), which exceed the 1981–2010 mean, are expected to boost heat and moisture fluxes into developing hurricanes. A persistently positive Atlantic Multidecadal Oscillation (AMO) phase, along with a projected neutral-to-La Niña–like ENSO phase, should jointly suppress vertical wind shear and foster enhanced cyclogenesis throughout the height of the season.

Forecaster	Named storms	Hurricanes	Major Hurricanes	ACE
NOAA	13-19	6-10	3-5	
Colorado State University	17	9	4	155
Tropical Storm Risk	14	7	3	120
Accuweather	13-18	7-10	3-5	125-175
Weatherbell	15-19	7-9	2-3	120-150
The Weather Company	19	9	4	
NC State University	12-15	6-8	2-3	
ECMWF	15	7		
Average	**Avg: 15.8**	**Avg: 7.6**	**Avg: 3.5**	**Avg: 135**
1991 - 2020 NOAA average	14	7	3	122

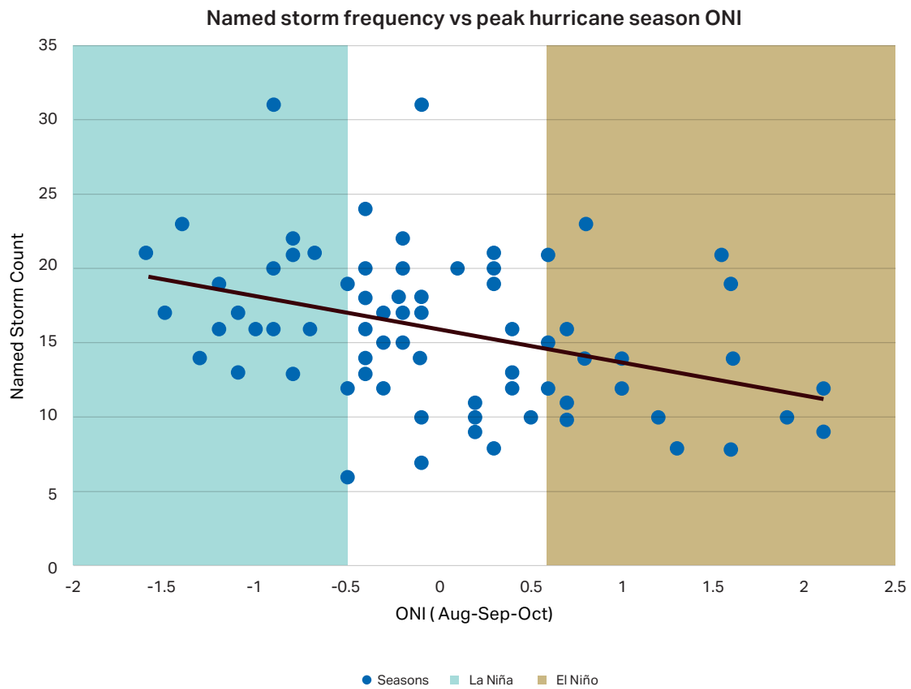
Named storm counts are inclusive of hurricane counts. Hurricane counts are inclusive of major hurricane counts.

What's the deal with El Niño?

The El Niño–Southern Oscillation (ENSO) plays a significant role in influencing Atlantic hurricane activity. ENSO intensity is measured by the Oceanic Niño Index (ONI) with negative values indicating La Niña conditions, and positive values indicating El Niño. Typically, El Niño conditions increase wind shear over the Atlantic, which can suppress hurricane formation, while La Niña conditions reduce wind shear, promoting more active hurricane seasons. However, it's important to note that while ENSO affects the frequency and intensity of hurricanes, it does not directly correlate with damage or losses incurred. A single hurricane making landfall in a vulnerable area can cause substantial damage, regardless of the overall activity level of the season.

For the upcoming 2025 Atlantic hurricane season, forecasts indicate a 74% chance of ENSO neutral conditions persisting through the summer months (June–August), with probabilities exceeding 50% through the August–October period. This neutral phase forecast suggests that neither El Niño nor La Niña will dominate.

Howden Re's analysis of 1950–2024 Atlantic hurricane records revealed a link between ENSO conditions and storm frequency. Years that are officially labeled as "neutral" (neither La Niña nor El Niño) appear to behave more like mild La Niña years. Analyzing the data using the continuous ONI the data clearly shows that recent "neutral" phases have been cool-neutral, or in other we would expect most of these ENSO neutral seasons to behave like La Niña seasons. This means that even in recent neutral years, the atmosphere tends to have lower wind shear and better conditions for storm development in the main part of the Atlantic where hurricanes typically form.

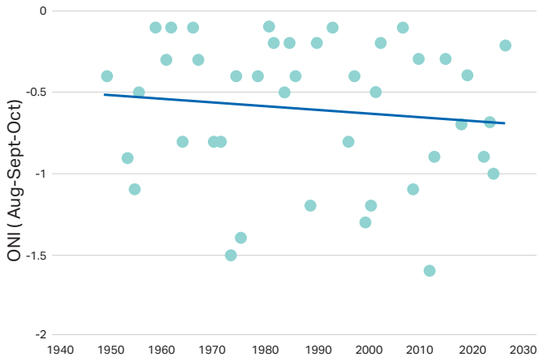


ENSO conditions

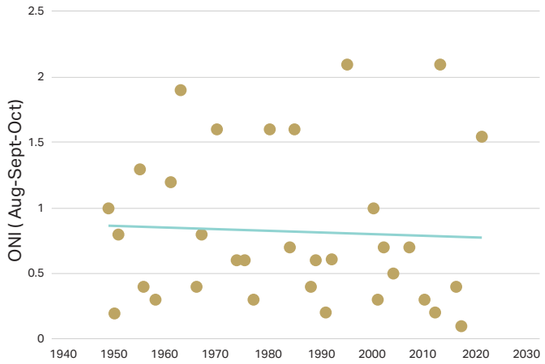
Trends over time in ENSO conditions at peak hurricane season, which occurs from August through October, could be part of the reason recent seasons have felt more active than average. The ONI has been trending down (meaning more supportive of hurricane development) over time. This holds true for both La Niña or cool ONI phases, and El Niño or warm phases. We cannot consider climate trends in isolation to draw strong conclusions, but this one is worth pointing out as we gear up for what is expected to be yet another above average hurricane season.

While ENSO phases influence the number and strength of hurricanes, the correlation between ENSO and hurricane-related losses is less direct. Historical data since 2000 show that significant damage can occur in both active and less active seasons, depending on factors like storm paths, landfall locations, and preparedness levels.

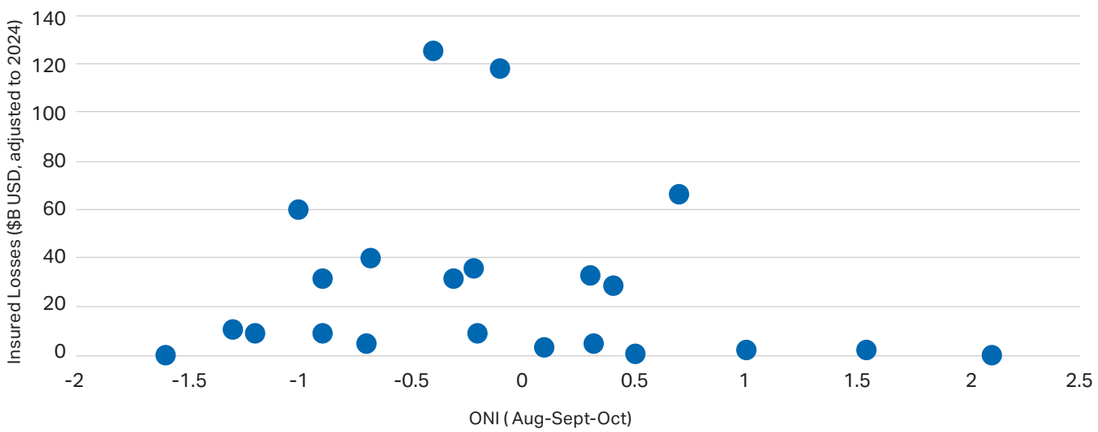
Peak hurricane season ONI trend during La Niña episodes



Peak hurricane season ONI trend during El Niño episodes



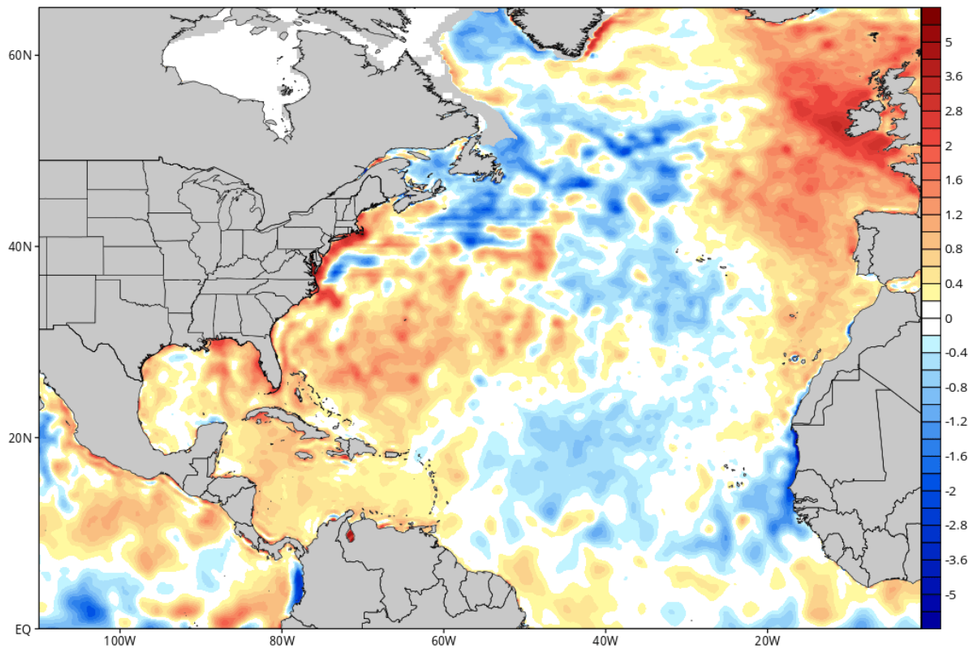
Annual hurricane loss (2000 – 2024) vs peak hurricane season ONI



When will the season open up?

Short-term bursts of activity in the atmosphere, known as intraseasonal pulses of the Madden–Julian Oscillation (MJO), can temporarily make the environment more favorable for tropical storms to form and rapidly strengthen. The MJO is a wave-like pattern of storms and rising air that moves around the globe, usually every 30 to 60 days. When one of these pulses moves over the Atlantic during hurricane season, it can lead to lower wind shear, increased moisture, and more rising motion in the atmosphere—all ingredients that help storms form and intensify quickly. These MJO events don't last long, but when they align with other favorable conditions, they can lead to sudden spikes in hurricane activity. Monitoring the MJO and analyses of this forecast will give medium term (2-4 weeks) indications of hurricane activity.

CDAS sea surface temperature anomaly (°C) (based on CFSR 1981-2010 climatology)
Analysis time: 06z May 20 2025
tropicaltidbits.com



Conclusion

In conclusion, the 2025 Atlantic hurricane season is shaping up to be one of elevated risk, with multiple overlapping signals pointing to enhanced storm development. Persistently warm SSTs, a favorable AMO phase, and a neutral ENSO backdrop all support a heightened threat environment. While the total number of storms may be above average, even a single landfalling hurricane in a densely populated region could drive significant impacts.

2025 Atlantic Tropical Cyclone Names

- Andrea
- Barry
- Chantal
- Dexter
- Erin
- Fernand
- Gabrielle
- Humberto
- Imelda
- Jerry
- Karen
- Lorenzo
- Melissa
- Nestor
- Olga
- Pablo
- Rebekah
- Sebastien
- Tanya
- Van
- Wendy

Storm names are assigned once a tropical cyclone reaches tropical storm strength, with sustained winds of at least 39 mph. The naming system assists in communication and public awareness during storm events. If all 21 names are used in a single season, any additional storms will be named using a supplemental list established by the WMO. These names are part of a rotating list used every six years for Atlantic hurricanes. Notably, "Dexter" is a new addition, replacing "Dorian," which was retired after the 2019 season.

Meet the experts

Anna Pergerson (Neely)
Managing Director
Head of R&D
anna.pergerson@howdenre.com

Justin Roth
Associate Director
Catastrophe Analytics R&D
justin.roth@howdenre.com

To discuss this report in more detail, contact our team of experts today at catwatch@howdenre.com

About Howden Re

At Howden Re, we add value beyond the placement. We understand the major strategic themes affecting our clients and whether we are engaged in strategy sessions, consulting arrangements or executive ad-hoc requests, Howden Re is a trusted partner to our clients and a thought leader in the industry.

Our dedicated risk teams provide a combination of specialised reinsurance brokerage services and analytical expertise for our clients worldwide.

Our unique ability to navigate an ever-changing market with precision while steadily executing the most valuable solutions sets us apart and demonstrates our overarching commitment to helping our clients succeed .

Howden Re Provides a differentiated and holistic approach to reinsurance, capital markets and strategic advisory

Howdenre.com

One Creechurch Place, London, EC3A 5AF

T +44 (0)20 7623 3806
F +44 (0)20 7623 3807
E catwatch@howdenre.com

howdenre.com