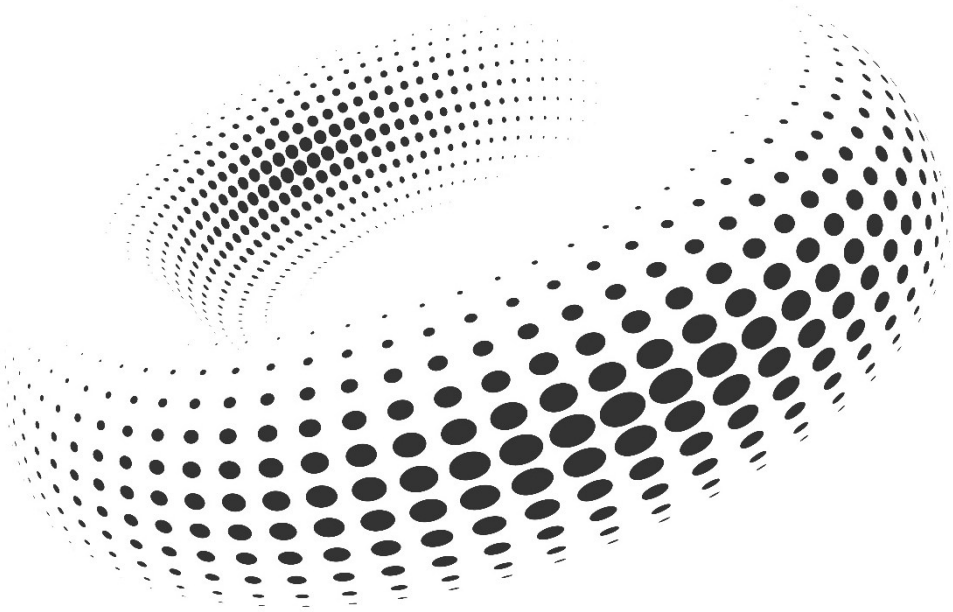
Plenum
Insurance Linked Capital

Mid-Season

Hurricane-Season 2026

Tropical Cyclone Activity in the Atlantic and Pacific

ACE Assessment, and Model Comparison



September 2026

Executive Summary and Climatic Context

Up to the mid-season point, the 2026 tropical cyclone season in the Northern Hemisphere exhibits an extremely pronounced asymmetry between the Atlantic and Pacific basins. While the North Atlantic is experiencing an unusually quiet phase with activity significantly below long-term averages, the East and Central Pacific shows highly above-average storm activity. The primary driver of this bifurcated picture is a strong El Niño event in the equatorial Pacific. The current sea surface temperature in the Niño 3.4 region is more than 2.9° Celsius above the climatological average (Figure 1)[1], placing it at record-high levels.

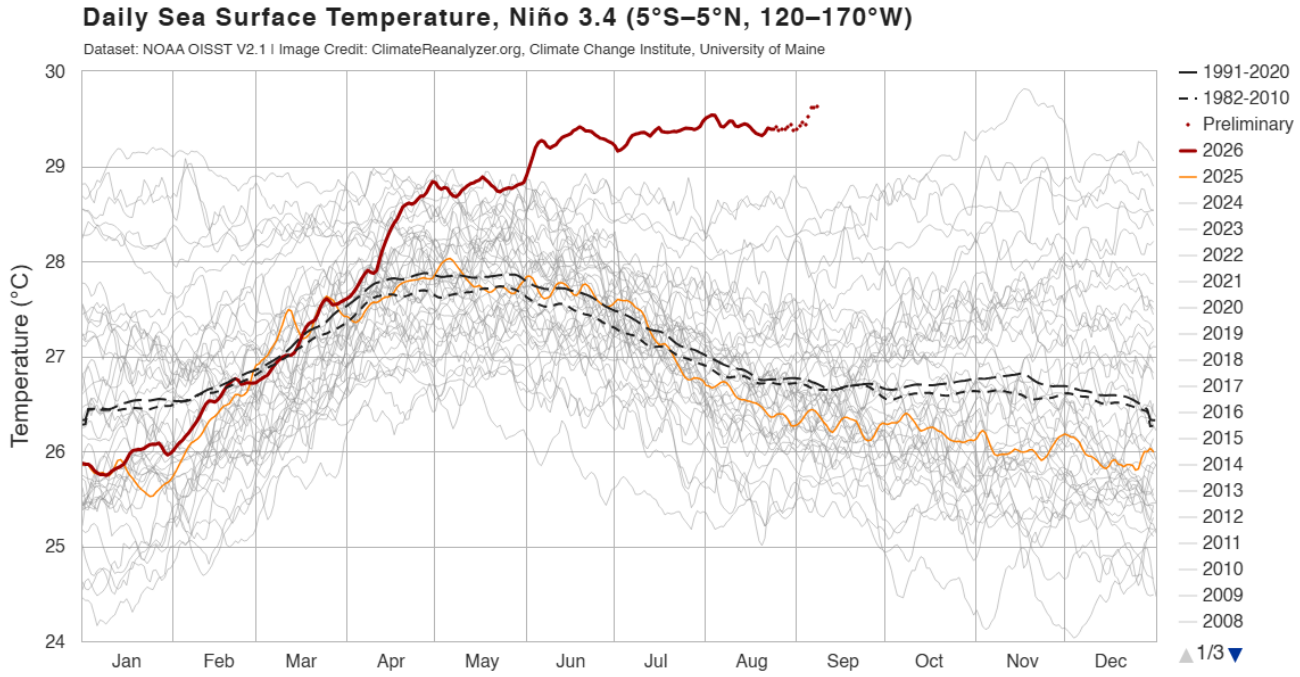


Figure 1

The resulting teleconnections in atmospheric circulation govern global tropical weather: in the Atlantic, El Niño leads to strong vertical wind shear and enhanced subsidence of air masses, suppressing the development of thunderstorm complexes. In the Pacific, conversely, the significantly above-average sea surface temperatures (SSTs) foster the rapid intensification of tropical cyclones.

Key Finding of the Mid-Season Assessment

The atmosphere's global balancing mechanism is on full display in 2026: A historically low activity index in the Atlantic stands in sharp contrast to one of the most active Pacific seasons in recent years.

[1] https://climatereanalyzer.org/clim/sst_daily/?dm_id=nino3.4, Vergleich zu 1982-2010

Accumulated Cyclone Energy (ACE)[2]

To objectively record and compare storm activity – both across oceanic basins and in historical as well as seasonal contexts – the mere count of named storms is insufficient. Standard practice therefore relies on the Accumulated Cyclone Energy (ACE) index. This parameter measures the total kinetic energy released by tropical cyclones during their lifetime. ACE is thus not a direct damage index, but rather measures total activity within an ocean basin.

$$ACE = 10^{-4} \times \sum (v\_max)^2$$

where v_max is measured in knots (kts) every 6 hours.

Significance of the ACE Indicator: Because wind speed is squared in the formula, intense and long-lived systems contribute disproportionately more to the ACE value than numerous short-lived, weak tropical storms.

[2] https://en.wikipedia.org/wiki/Accumulated_cyclone_energy

Detailed Analysis of the Respective Basins[3]

Despite the reduced activity in the North Atlantic, across the Northern Hemisphere as a whole we observe storm activity that is approximately 30% higher than historical climatology relative to the 1991–2020 average, driven primarily by very active storm development in the Northwest Pacific. Below, we examine the key regions individually:

North Atlantic and Caribbean «significantly below average»

Progress to date: The season in the Atlantic has been extremely muted so far. Tropical Storm Bertha was the strongest event to date, but dissipated quickly.

Inhibiting factors:

- Vertical wind shear: Strong upper-level winds caused by El Niño suppress storm development.
- Saharan Air Layer (SAL): Dry air inhibits shower and thunderstorm formation.

ACE Status: less than 10% of the seasonal average (1991–2020).

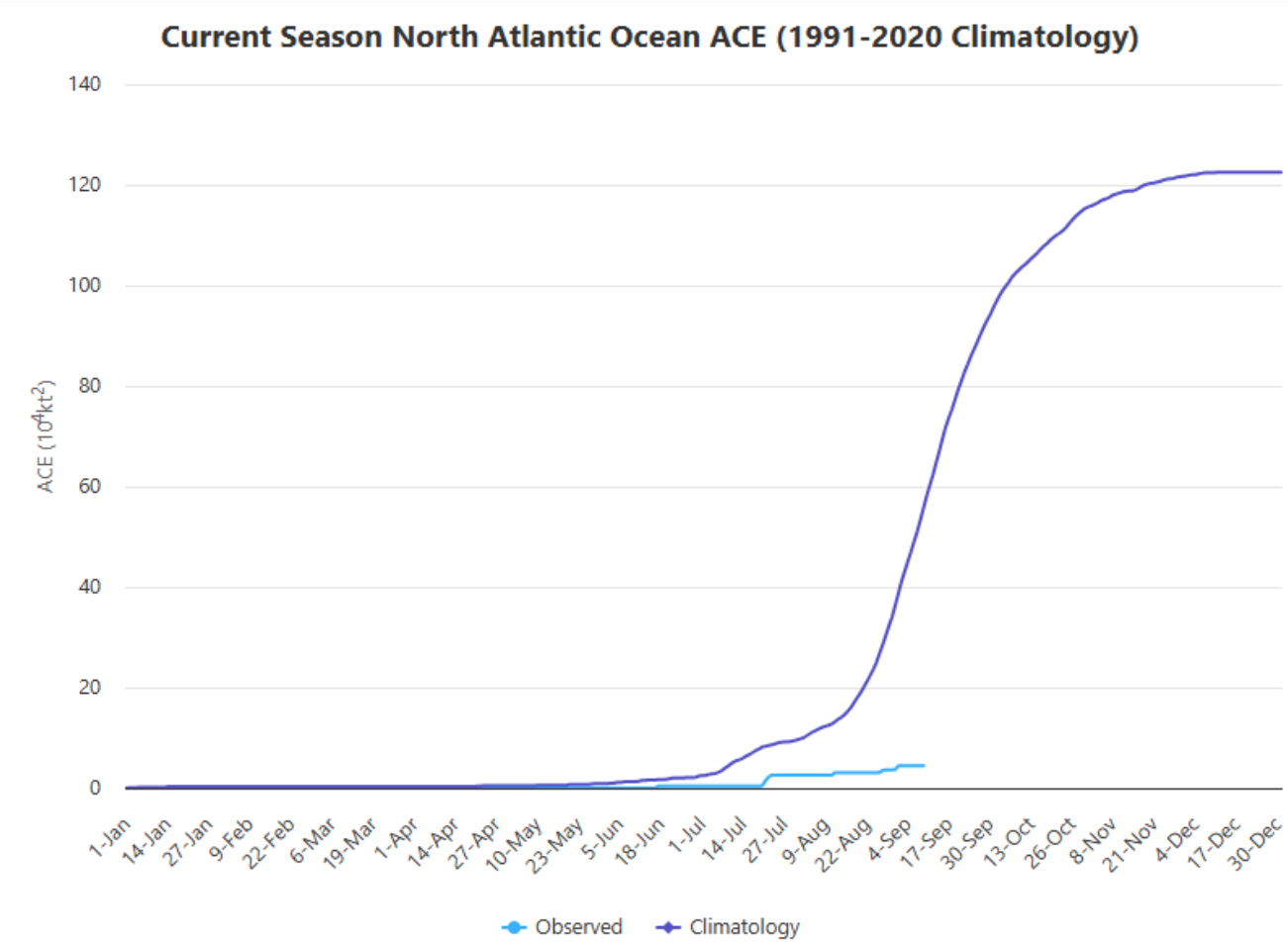


Figure 2[4]

[3] https://tropical.atmos.colostate.edu/Realtime/
[4] https://tropical.atmos.colostate.edu/Realtime/index.php?loc=northatlantic

Northeast Pacific (East of 180°) «significantly above average»

Progress to date: Aabove-average activity: 15 named storms recorded to date, of which 6 became hurricanes, including 4 major hurricanes such as Genevieve and Lowell (Category 5), and Lala and Karina (Category 4).

Favorable factors:

- High SSTs: Water temperatures exceeding 29–30°C.
- Low wind shear: Favors the unimpeded formation of tropical storms.

ACE Status: more than 90% above the average (1991–2020).

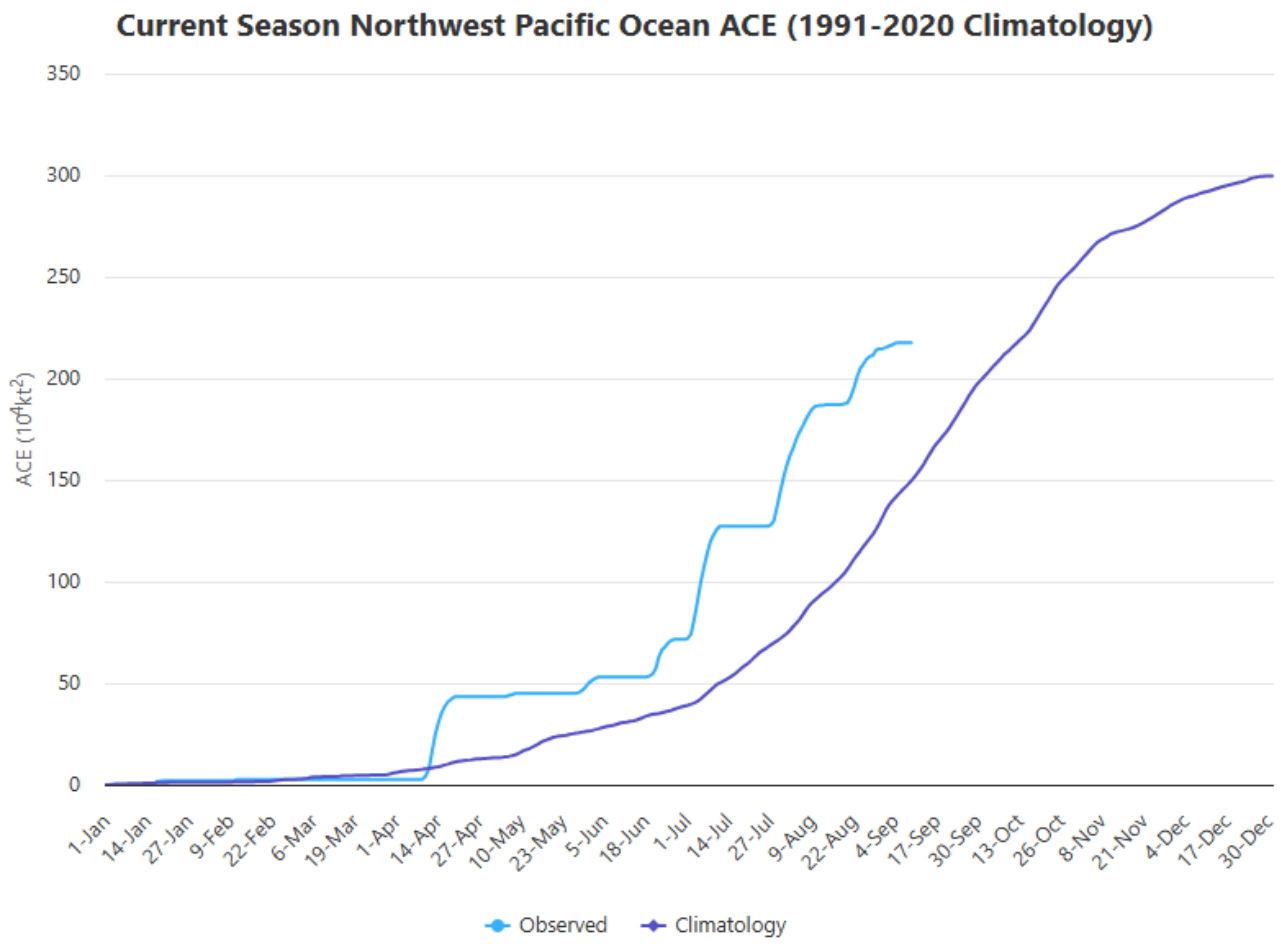


Figure 3[5]

Northwest Pacific (West of 180°) «above average»

Progress to date: Early start and high activity: 20 named storms to date, including 8 hurricanes, 4 of which reached the highest category (Sinlaku, Bavi, Dolphin, Saudel).

Favorable factors:

- High SSTs: Water temperatures exceeding 29–30°C.
- Low wind shear: Favors the unimpeded formation of tropical storms.

ACE Status: roughly 45% above the average (1991–2020).

[5] https://tropical.atmos.colostate.edu/Realtime/index.php?loc=northeastpacific

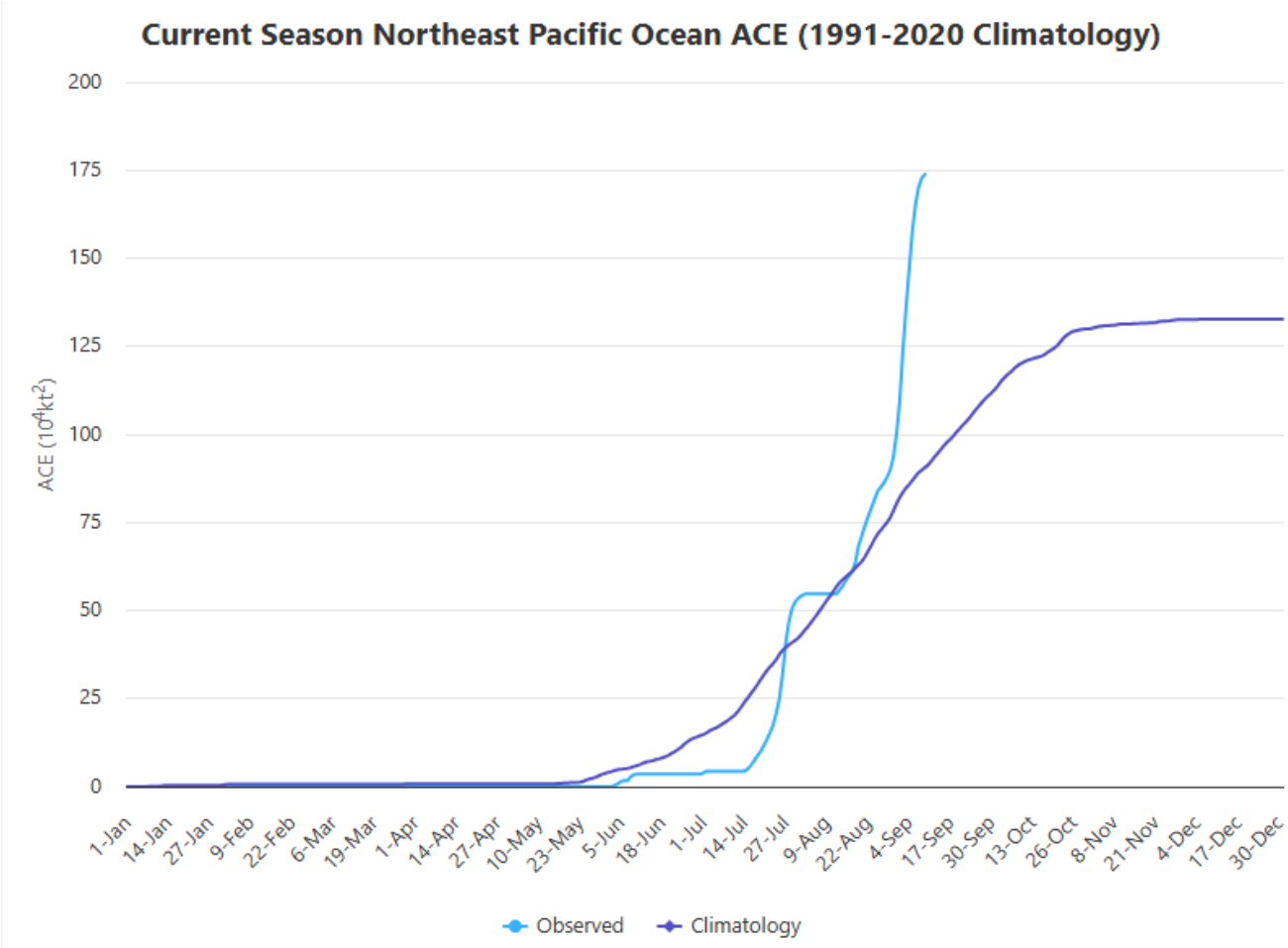


Figure 4[6]

[6] https://tropical.atmos.colostate.edu/Realtime/index.php?loc= northwestpacific

Comparison with Forecast Models (Forecast Check)

Prior to and during the season, leading institutes such as the National Oceanic and Atmospheric Administration (NOAA)[7] and Colorado State University (CSU)[8] issued their seasonal forecasts. The sharply diverging storm activity between the two regions – and in particular the below-average activity in the Atlantic – is consistent with the published forecasts. The following table compares the official forecast ranges with the trends observed through mid-season:

Parameter	Atlantic Forecast (NOAA/CSU)	Northeast Pacific Forecast (NOAA)	Observed Trend (Mid-Season)
Overall Season Classification	Below Average (~75%)	Above Average (~70%)	Forecast Confirmed
Named Storms	7 – 13 Storms	15 – 22 Storms	Atlantic: 5 | Pacific: 15
Total Hurricanes	2 – 6 Hurricanes	9 – 14 Hurricanes	Atlantic: 0 | Pacific: 6
Major Hurricanes (3+)	0 – 2 Major Hurricanes	5 – 9 Major Hurricanes	Atlantic: 0 | Pacific: 4
Forecasted ACE Range	30% – 90% of Median	120% – 190% of Median	Atlantic Extremely Low (<10%), Pacific High
Primary Steering Pattern	High Wind Shear (El Niño)	Warm Water Anomaly (El Niño)	Atmos. Coupling Fully Active

Impact on the CAT Bond Market

A pronounced El Niño event can amplify the intensity of droughts, floods, heatwaves, and wildfires. Regions such as Southeast Asia, South America, East Africa, and the Indian subcontinent are particularly vulnerable. While the associated crop failures, rising food costs, and food insecurity pose challenges for the global community, these represent risks that are currently not covered in the CAT bond market. Hawaii is a component of certain CAT bond transactions. CAT bond investors are therefore exposed to the higher storm activity in the Pacific; however, the state's contribution to overall CAT bond market risk is very small. Even a substantial loss event in Hawaii would likely have only minor impacts on the CAT bond market. The largest risks borne by CAT bond investors are earthquakes and hurricanes in the United States. Because the US coastline is primarily affected by hurricanes originating in the Atlantic, reduced storm activity in the Atlantic leads to a lower probability of major loss payouts. In the absence of relevant events for CAT bonds exposed to US hurricane risk, an appreciation of these CAT bonds in line with the typical seasonal pattern is expected. On the other hand, a below-average loss burden results in an accumulation of capital through earned risk premiums. Consequently, more capital becomes available for future risk coverage, which could intensify competition for risk underwriting and lead to declining premium trends. This mechanism primarily affects new issuances and renewals; however, premium development also depends on other factors such as capital inflows, investor allocation, other loss events, reinsurance demand, model changes, and sponsor capacity.

[7] https://www.noaa.gov/news-release/noaa-maintains-prediction-for-below-normal-atlantic-hurricane-season / https://cpc.ncep.noaa.gov/products/Epac_hurr/index.shtml
[8] https://tropical.colostate.edu/Forecast/2026-08.pdf

Risk Assessment & Outlook for the Second Half of the Season

Although the figures for the Atlantic appear reassuring, meteorologists traditionally urge caution. The statistical peak of the Atlantic season falls between mid-August and late October, a period that historically accounts for over 80% of storm activity.[9] Even in climatologically "quiet" or below-average years, a single landfall can cause devastating damage.

For the Pacific, the threat level for the western coast of Mexico as well as for the Hawaiian Islands remains elevated into late autumn, as water temperatures persist at high levels and El Niño continues to provide favorable conditions for tropical cyclogenesis.

"Hurricane Andrew"

A low overall ACE in the Atlantic is no guarantee of coastal safety. The historical year 1992 was likewise a strong El Niño year with extremely low overall activity. Nevertheless, Hurricane Andrew made landfall in Florida that year as a Category 5 system, causing catastrophic damage. A single system is sufficient to make a season disastrous.

[9] https://tropical.atmos.colostate.edu/Realtime/index.php?loc=northatlantic