August Forecast Update for Northwest Pacific Typhoon Activity in 2025

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by Dr Adam Lea
EuroTempest Ltd, London, UK

TSR continues to predict that Northwest Pacific typhoon activity in 2025 will be around 15-20% below the 1991-2020 30-year norm.

Summary: The TSR (Tropical Storm Risk) August forecast for Northwest Pacific typhoon activity in 2025 anticipates a season with below-norm activity. TSR uses the strong link between the annual Northwest Pacific ACE index and August-September-October (ASO) ENSO combined with trade wind anomalies across the western tropical Pacific through June and July, activity to-date and the Pacific Decadal Oscillation (PDO). We anticipate all these factors to have a suppressing effect on NW Pacific typhoon activity in 2025. Although some uncertainties remain, TSR anticipates there is only an 8% likelihood that Northwest Pacific ACE in 2025 will be above the 1991-2020 climate norm.

1. TSR August 2025 Northwest Pacific Seasonal Typhoon Activity Forecast

Further information on the TSR statistical prediction models and adjustments that are used to generate the forecasts below can be found in Section 2 of Supplementary Information.

1.1 Forecast Northwest Pacific ACE Index and System Numbers in 2025:

		ACE Index	Intense Typhoons	Typhoons	Tropical Storms
TSR Forecast	2025	237	7	15	25
30-yr Climate Norm	1991-2020	301	9.3	16.0	25.5
10-yr Climate Norm	2015-2024	250	8.4	14.2	24.0
Forecast Skill at this Lead	2015-2024	73%	33%	0%	0%

The forecast tercile probabilities (1991-2020 data) for the 2025 Northwest Pacific typhoon season ACE index are as follows: only an 8% probability of being upper tercile, a 28% likelihood of being middle tercile and a 64% chance of being lower tercile.

1.2 Forecast Probability of Exceedance Plot for the Northwest Pacific ACE index in 2025:

See Section 3 in the Supplementary Information for the motivation behind the probability of exceedance chart. Figure 1 displays our current forecast for the 2025 Northwest Pacific ACE index in terms of PoE. The forecast PoE curve is computed using the robust method described in Section 3 of Saunders et al. (2020) while the climatology PoE curve is computed directly from observations. The figure specifies the current chance that a given ACE index will be reached in 2025 and how this chance compares to climatology.

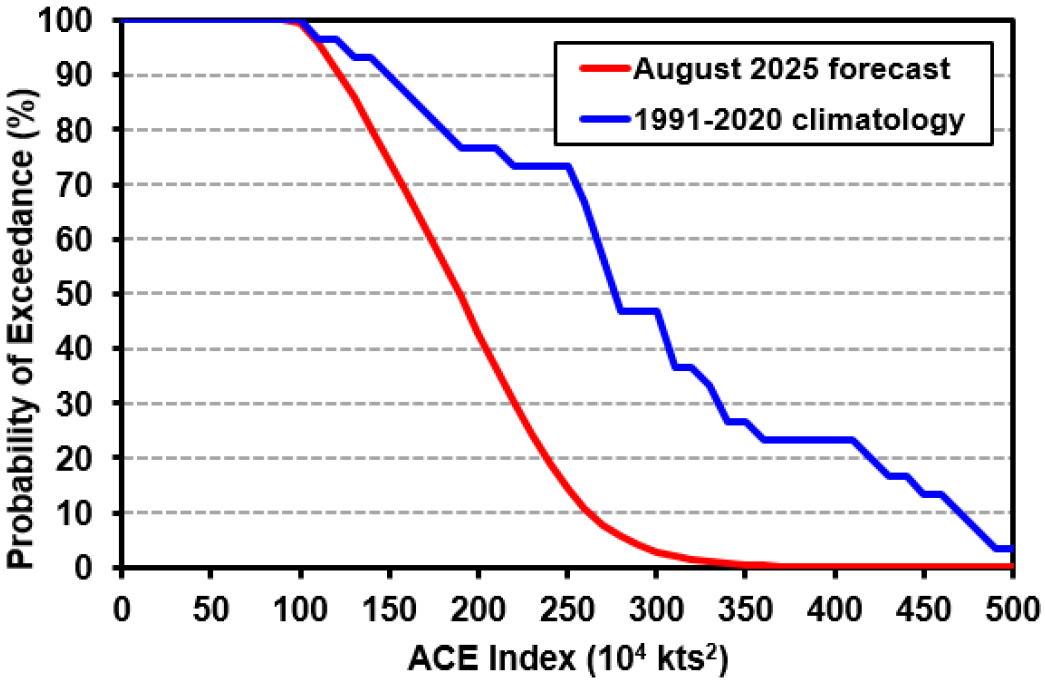

Figure 1. Forecast probability of exceedance (PoE) plot for the Northwest Pacific ACE index in 2025. The plot displays two sets of PoE data comprising the TSR forecast PoE curve issued in early August and the 1991-2020 climatology PoE curve.

2. Factors Influencing the August 2025 TSR Forecast

ENSO: The International Research Institute for Climate and Society (IRI) multi-model ensemble continues to predict neutral ENSO conditions through the rest summer and autumn to high probability. There has been a general shift in the forecast models towards cold-neutral conditions through the rest of this year with a low probability of La Niña developing through the Autumn. We believe these cold-neutral conditions will have a small suppressing effect on NW Pacific typhoon activity in 2025.

Equatorial Zonal Wind Speed: There is a moderate correlation (Pearson r^2=0.52) between the June-July zonal wind speed anomaly across the region 2.5°N-12.5°N, 140°E-180° and the NW Pacific ACE index. Stronger-than-normal easterly winds across this region are linked to below-average NW Pacific typhoon activity. The June-July 2025 wind anomaly is slightly easterly (stronger-than-normal trade winds) which corresponds to a small suppressing impact on the NW Pacific typhoon season in 2025.

Activity-to-date: There is a moderate correlation between the ACE index through the year up to the 7th August and total seasonal NW Pacific ACE index. Despite a surge in activity during July, the 2025 ACE index to-date is 39 which is in the lowest quartile (25%) of years going back to 1965 and is consistent with a upcoming below-average NW Pacific typhoon season. When the lowest quartile of ACE index to-date years are considered, 14 saw below average activity, one year saw near-average activity and the average ACE index over these 15 years is 199.

Pacific Decadal Oscillation: The Pacific Decadal Oscillation (PDO) is often described as a long-lived El Niño pattern of Pacific climate variability. Warm phases of the PDO are linked to enhanced typhoon activity and vice-versa. Since the year 2020, the PDO has been in a negative phase which historically tends to suppress typhoon activity, particularly when other factors are aligned to also suppress activity.

The typhoon seasons over the last five years have been below average. Consequently, the PDO may have a small suppressing effect on NW Pacific typhoon activity in 2025.

3. Confidence and Uncertainties

ENSO: Our expectation for cold-neutral conditions through ASO 2025 has good confidence. The International Research Institute for Climate and Society (IRI) multi-model ensemble continues to predict neutral ENSO conditions through summer and autumn to high probability. There has been a general shift in the ensemble members towards cold-neutral conditions through the rest of this year with a low probability of La Niña developing through the autumn. If weak La Niña conditions do develop, this is likely to have a greater suppressing effect on the 2025 NW Pacific typhoon season.

Skill: Historically, the skill from early August forecasts for Northwest Pacific typhoon activity is moderate (see Section 4b in the Supplementary Information). This is because even if the ASO ONI value is anticipated correctly, a spread in ACE levels can still ensue, and because activity during a couple of recent typhoon seasons has differed considerably from what was predicted after looking at the known climate factors. Favourable or unfavourable intra-seasonal factors which cannot be predicted can also influence overall activity.

4. Forecast Archive and Next Forecast

The archive of all the TSR publicly released Northwest Pacific seasonal typhoon forecasts (from 2000 to 2025) may be viewed at *https://www.tropicalstormrisk.com/for_typh.html*. This is the final TSR forecast update for the 2025 Northwest Pacific typhoon season. A summary of the 2025 NW Pacific typhoon season and verification of the TSR seasonal forecasts will be issued in early January 2026.

5. List of Predictions Issued for the 2025 NW Pacific Typhoon Season

NW Pacific ACE Index and System Numbers 2025					
		ACE Index	Named Tropical Storms	Typhoons	Intense Typhoons
Average Number (1991-2020)		301	25.5	16	9.3
Average Number (2015-2024)		250	24	14.2	8.4
TSR Forecasts	7th August 2025	237	25	15	7
	8th July 2025	250	25	15	8
	23 May 2025	266	25	15	8