July Forecast Update for Northwest Pacific Typhoon Activity in 2025

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TSR slightly lowers its forecast and predicts that Northwest Pacific typhoon activity in 2025 will be around 15% below the 1991-2020 30-year norm.

Summary: The TSR (Tropical Storm Risk) July forecast for Northwest Pacific typhoon activity in 2025 anticipates a season with below-norm activity. TSR uses the strong link (R^2 = 0.80; 1993-2024) 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, activity to-date and the Pacific Decadal Oscillation (PDO). Although some uncertainties remain, TSR anticipates there is only a 14% likelihood that Northwest Pacific ACE in 2025 will be above the 1991-2020 climate norm.

1. TSR July 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	250	8	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	27%	1%	0%	0%

The forecast tercile probabilities (1991-2020 data) for the 2025 Northwest Pacific typhoon season ACE index are as follows: only a 14% probability of being upper tercile, a 32% likelihood of being middle tercile and a 54% 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.

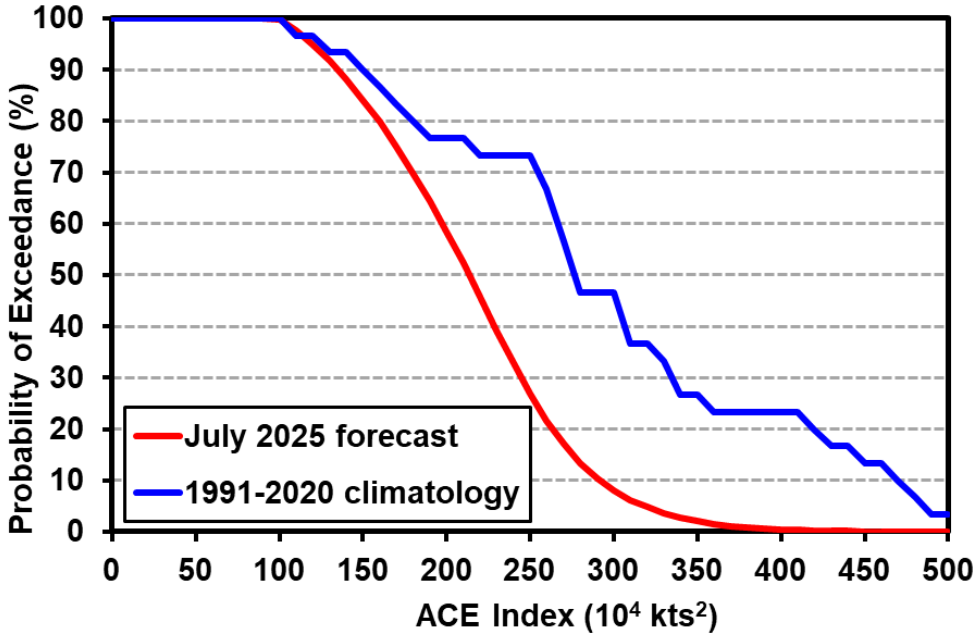

Figure 1. Forecast probability of exceedance (PoE) plot for the Northwest Pacific ACE index in 2025. The plot displays two sets of PoE data comprising the TSR forecast PoE curve issued in early July and the 1991-2020 climatology PoE curve.

2. Factors Influencing the July 2025 TSR Forecast

ENSO: The consensus forecast value for ASO ENSO ONI that we employ is -0.15°C which corresponds to neutral ENSO conditions. We do not currently believe ENSO will be a significant factor influencing NW Pacific typhoon activity in 2025.

Equatorial Zonal Wind Speed: There is a moderate correlation (Pearson r^2=0.41) between the July zonal wind speed anomaly across the region 2.5°N-12.5°N, 140°E-180°. Stronger-than-normal easterly winds across this region are linked to below-average NW Pacific typhoon activity. The June 2025 wind anomaly is -0.2 ms^{-1} which corresponds to a neutral impact on the NW Pacific typhoon season in 2025.

Activity-to-date: There is a moderate correlation (Pearson r^2=0.36) between the ACE index through the year up to the 7th July and total seasonal NW Pacific ACE index. The 2025 ACE index to-date is 13 which is in the lowest 25% of years going back to 1965 and is consistent with a below-average NW Pacific typhoon season. When the lowest tercile (20 years) of ACE index to-date are considered, 16 years saw below average activity and only two years saw above-average activity in total, so whilst an active typhon season is not impossible after the slow start to the season, it is very unlikely based on data over the last 60 years.

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. From 2020 to 2025 the July PDO has been in a negative phase which historically tends to suppress typhoon activity and typhoon seasons over that five-year period have been below average; however, the correlation between July PDO and upcoming typhoon activity over the period 1965-2023 is low (Pearson r^2 ~ 0.11). The PDO may have a small suppressing effect on NW Pacific typhoon activity in 2025.

3. Confidence and Uncertainties

ENSO: Our expectation for neutral conditions through ASO 2025 has good confidence. Most of the model forecasts provided by IRI are forecasting near-neutral ENSO conditions during ASO 2025.

Skill: Historically, the skill from early July forecasts for Northwest Pacific typhoon activity is low to 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*. The final TSR forecast update for the 2025 Northwest Pacific typhoon season will be issued on Tuesday 6th August, 2025. A summary of the 2025 NW Pacific typhoon season and verification of the TSR seasonal forecasts will be issued in early January 2026.