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2025 Northwest Pacific Typhoon Season Outlook

Jun 2025

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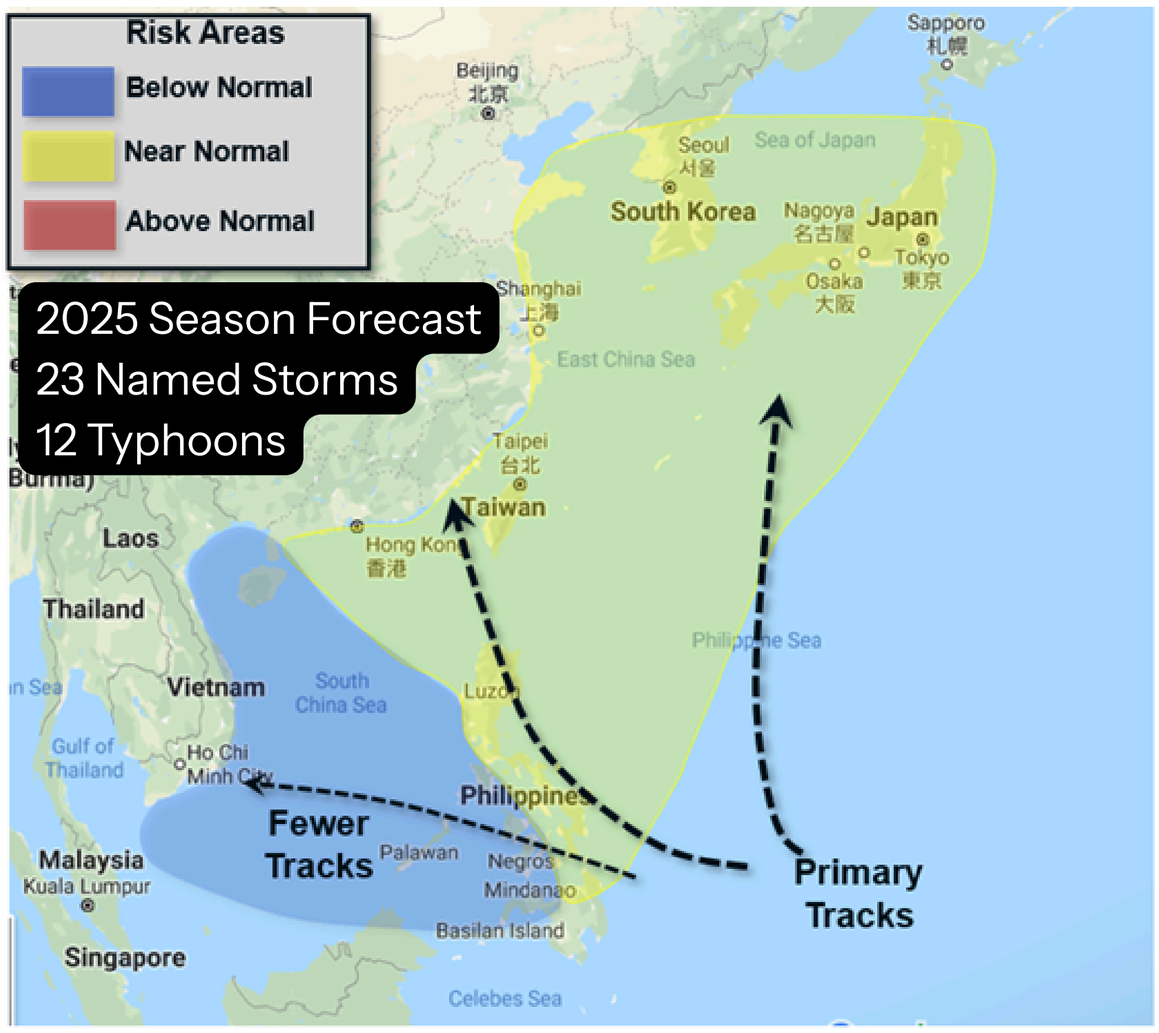
European Model and Cooler Water Temperature Indicate Reduced Activity Across the Northwest Pacific

Key factors influencing the Northwest Pacific:

- The end of La Niña
- Indian Ocean Dipole (IOD)
- Cooler water temperatures



2025 Risk Areas

Season Outlook

The 2025 West Pacific typhoon season was very slow to start.The first named storm of the year did not occur until the 12th of June, when it was given the name Wutip.Wutip became a typhoon two days later before moving ashore into southern China. Since then, the West Pacific has been very quiet. There are currently no significant disturbances in the basin, and no tropical storm is likely to form through the end of June. The slow start to the season indicates that conditions in the West Pacific are not very favorable for tropical storm development. Whether these unfavorable conditions persist through the season is uncertain.

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El Nino/La Nina

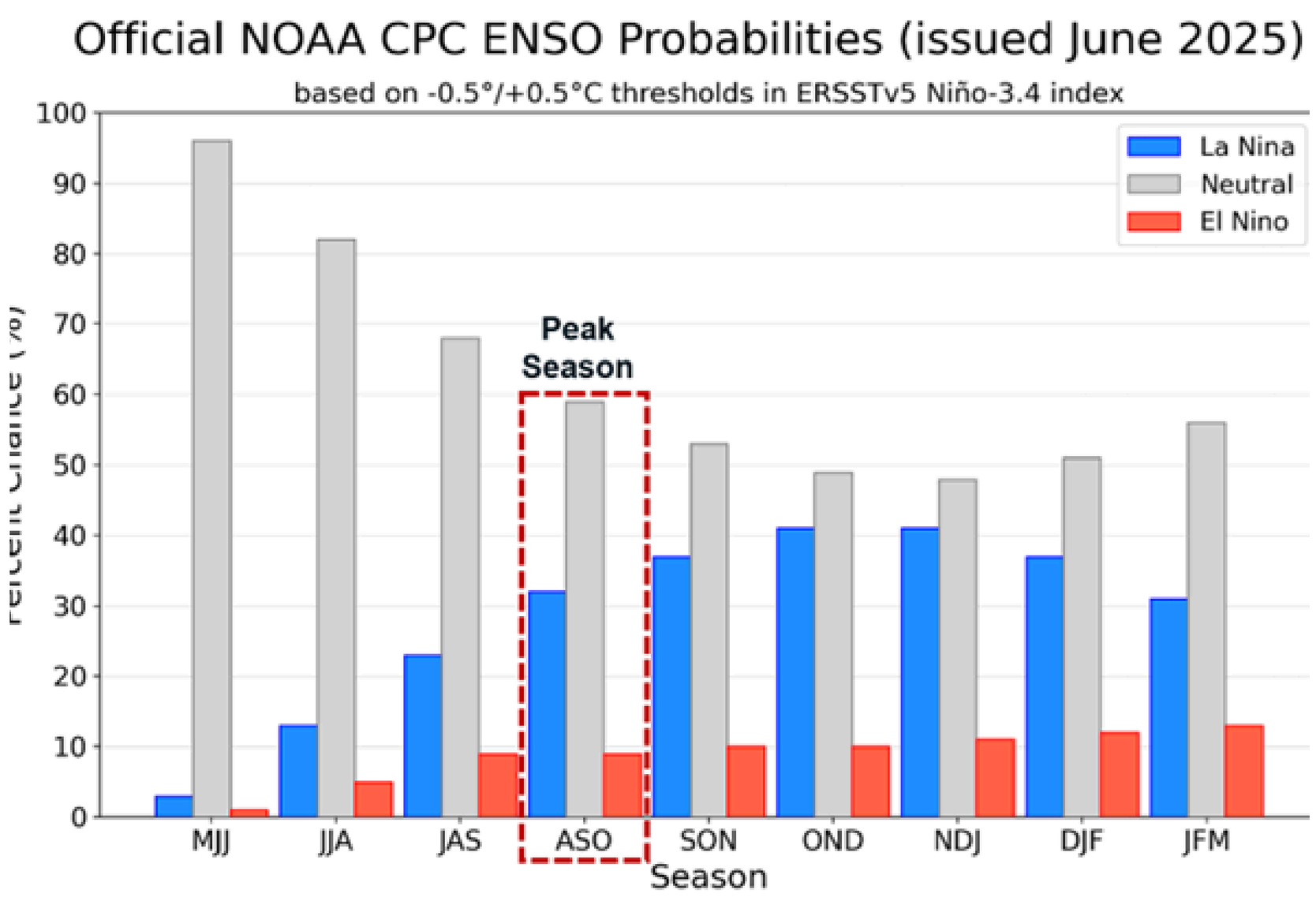
One primary driver of typhoon activity in the Northwest Pacific is the state of El Niño Southern Oscillation (ENSO). ENSO is represented by the Oceanic Niño Index (ONI), which is defined as the 3-month average surface temperature anomaly for the Niño 3.4 region in the Tropical Pacific. When the sea surface temperature anomaly is less than 0.5C below normal over a three-month period, it is identified as a La Niña.Conversely, when the average sea surface temperature anomaly is greater than 0.5C for a three-month period, it is identified as an El Niño.

Last season, the tropics were dominated by a moderate to strong La Niña. During a La Niña, warm air sinks in the eastern part of the Pacific Basin and rises in the western part. This inhibits typhoon activity in the West Pacific. For 2025, the Tropical Pacific appears to be switching to neutral conditions. The La Niña of last season is fading as water temperatures warm into the neutral area between La Niña and El Niño.

All computer models are predicting that the current neutral conditions will prevail through the typhoon season. The current prediction is for a 59% chance neutral conditions and a 32% chance of La Niña this summer and fall. This would neither be an enhancing or an inhibiting factor this season.

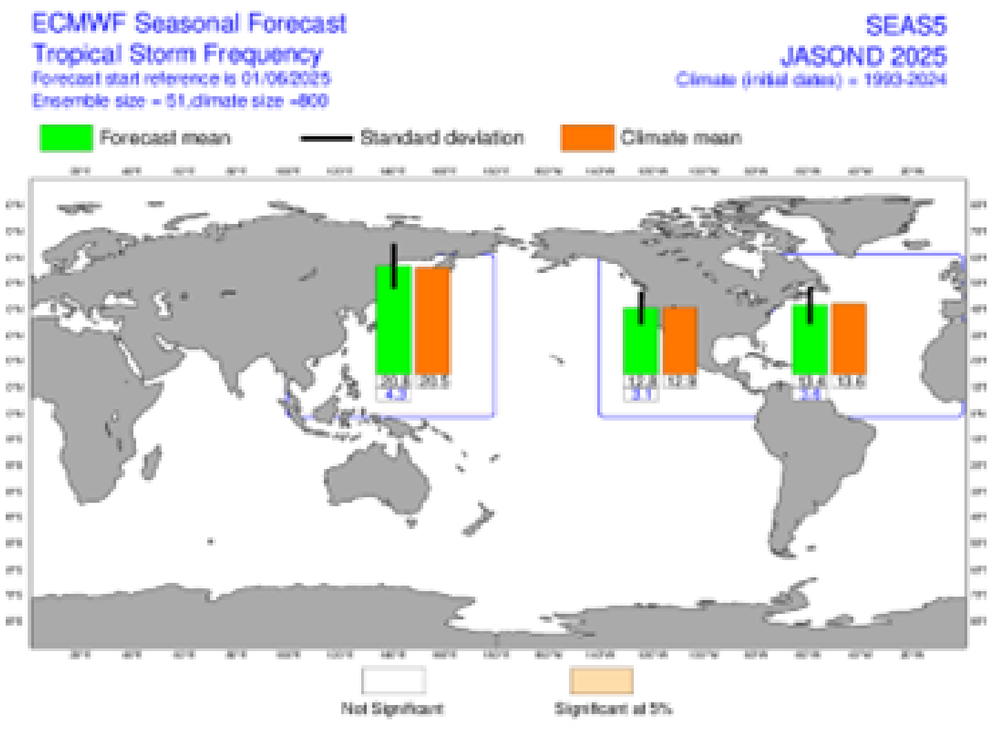
Atlantic Water Temperatures

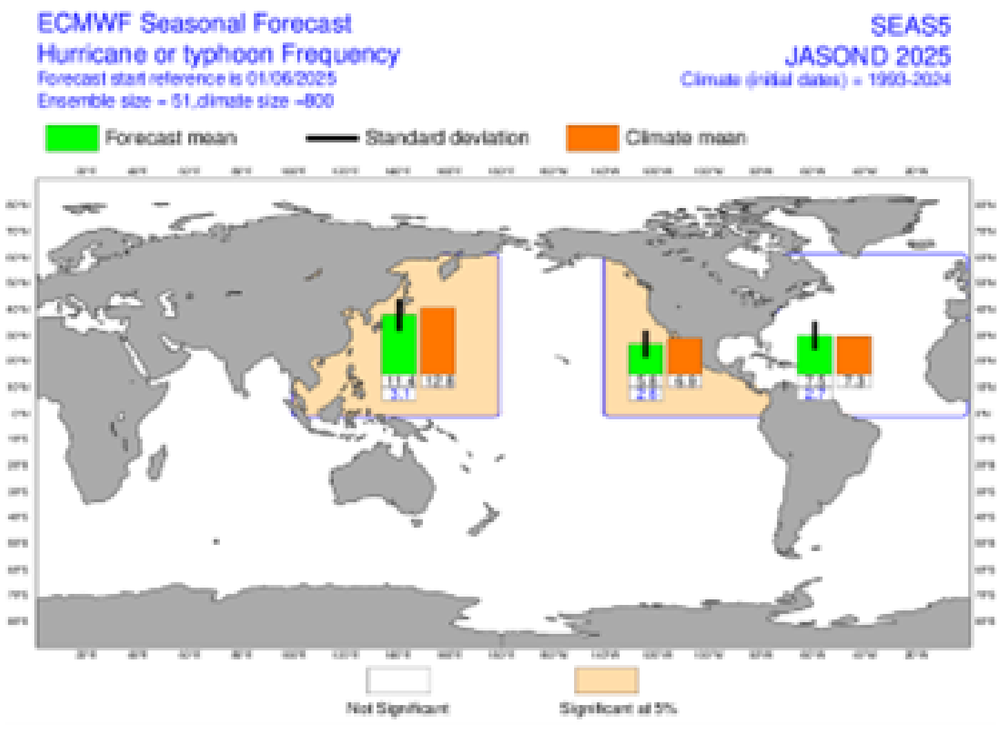
Atlantic water temperatures, particularly across the Main Development Region (MDR) from the Eastern Caribbean to Africa, remain much cooler than they were last season. However, in recent weeks, we are seeing less of a cool anomaly in the MDR. This could be a sign that the Azores-Bermuda high pressure area is weakening, as predicted. Such a pressure pattern would favor storms forming in the MDR but turning north near or prior to reaching the eastern Caribbean this year rather than progressing west across the Caribbean and into the Gulf.



European Model

Each year, the European model produces seasonal tropical cyclone forecasts around the world. For 2025, the European model is predicting about 21 named storms from July through December, which is close to normal. As for typhoons, the European model is predicting a total of 7.5 through December, which is about one typhoon below normal. In general, the European model is predicting that activity will be a little below normal through December.

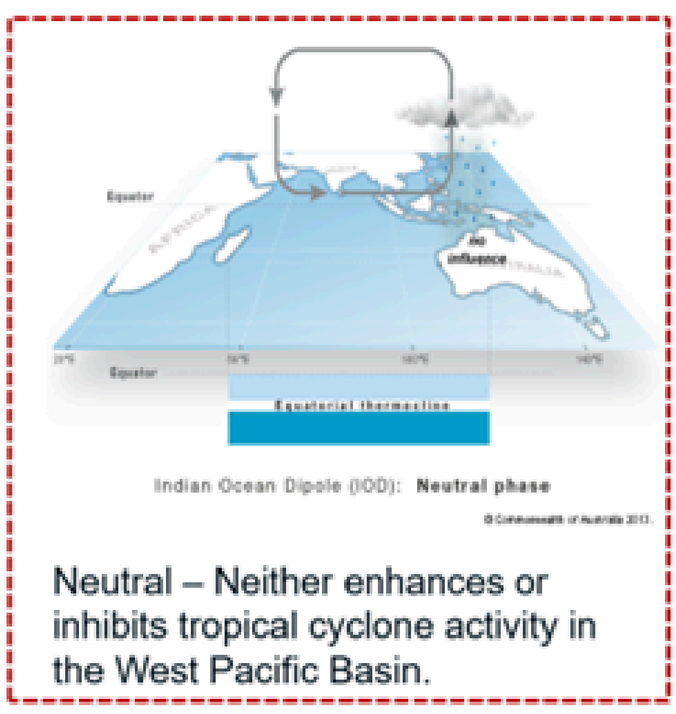




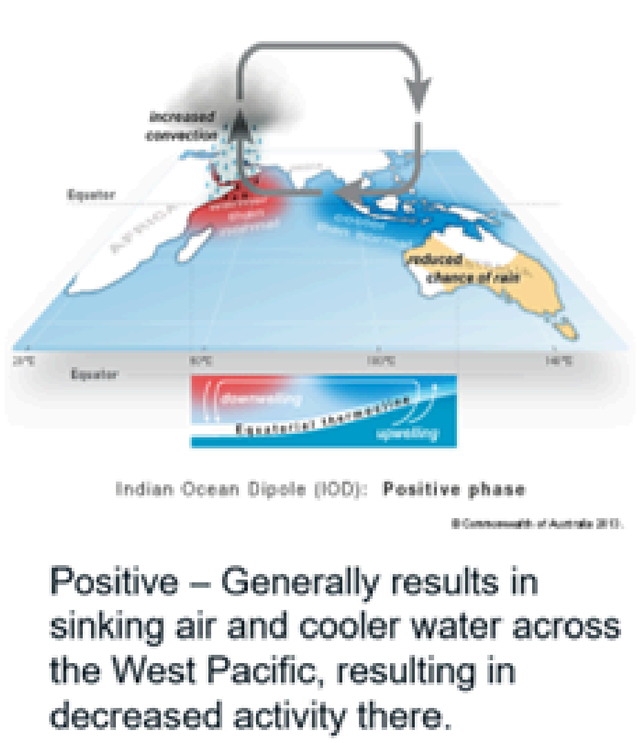
Indian Ocean Dipole (IOD)

Another feature which can significantly influence Northwest Pacific typhoon activity is the Indian Ocean Dipole (IOD). The IOD is defined by the difference in sea surface temperatures between the eastern and western tropical Indian Ocean. The current forecast is for a neutral phase through much of the season. A neutral phase would neither enhance or suppress activity in the Northwest Pacific.

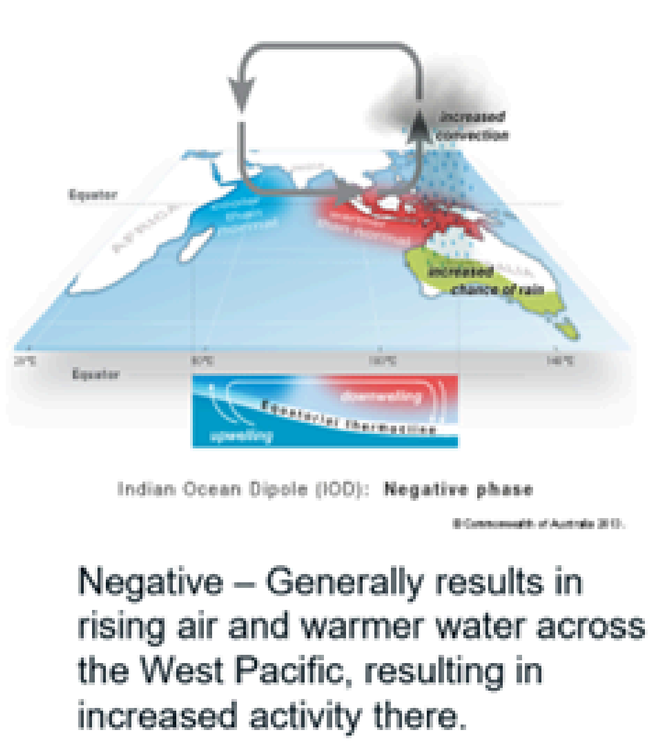
This year, the IOD is predicted to be in the neutral phase, which neither inhibits or enhances formation.



Neutral – Neither enhances or inhibits tropical cyclone activity in the West Pacific Basin.



Positive – Generally results in sinking air and cooler water across the West Pacific, resulting in decreased activity there.



Negative – Generally results in rising air and warmer water across the West Pacific, resulting in increased activity there.

Source: http://www.bom.gov.au/climate/enso/#tabs=Indian-Ocean

Water Temperatures

Water temperatures in the northwest Pacific are generally not a major issue during typhoon season, as the water is always warm enough for typhoons to form. However, water temperatures so far this season are significantly cooler than average across both the South China Sea and the Philippine Sea. While the water isn't cool enough to prevent typhoons from forming, the cooler water may limit the number of very strong typhoons in these two regions this season. Water temperatures from Taiwan through northern Japan are well above normal, which would provide a favorable environment for stronger typhoons.

Our June Forecast

Most seasonal predictors are indicating that typhoon activity across the West Pacific will be a little below normal again this season. La Niña has faded to neutral this year, which will not be an enhancing or an inhibiting factor.

Considering the factors mentioned above, we think that activity will be below normal again this year. In particular, the first half of the season will be below normal. Stronger typhoons may be concentrated farther north and east than is typical, threatening southeast China through Japan more than Vietnam. The South China Sea may be relatively quiet again this season. We are predicting a total of 23 named storms this season, which is a little below the 30-year average of 26. As for typhoons, we are predicting a total of 12 again this season, which is below the 30-year average of 16 typhoons.

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