NORTHWEST PACIFIC TYPHOON OUTLOOK 2023

Outlook for the 2023 Northwest Pacific Typhoon Season

Issued: May 11, 2023

The 2022 typhoon season featured fewer typhoons than normal, but even a quiet season in the West Pacific typically has several significant typhoon impacts. Half of the ten typhoons that formed last season struck land.Southern and eastern China were hit, as was southern Japan and South Korea. The strongest typhoon impact was from Typhoon Noru, which struck southern Luzon in late September then tracked west to Vietnam. The major cities of Hong Kong, Tokyo, and Taipei had no significant impacts in 2022. The West Pacific has been relatively quiet so far this season, with only a weak, short-lived Tropical Storm Sanvu earlier in April.

// El Niño/La Niña

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.

For the past three seasons, the tropics were dominated by a moderate to strong La Niña. During a La Niña, warm air rises in the western part of the Pacific Basin and sinks in the eastern part. This enhances typhoon activity in the West Pacific. For 2023, La Niña is ending across the Tropical Pacific. All computer models are predicting that El Niño will be present by summer. The current prediction is for an 82% chance of El Niño this summer and fall. This would be an inhibiting factor in the West Pacific.

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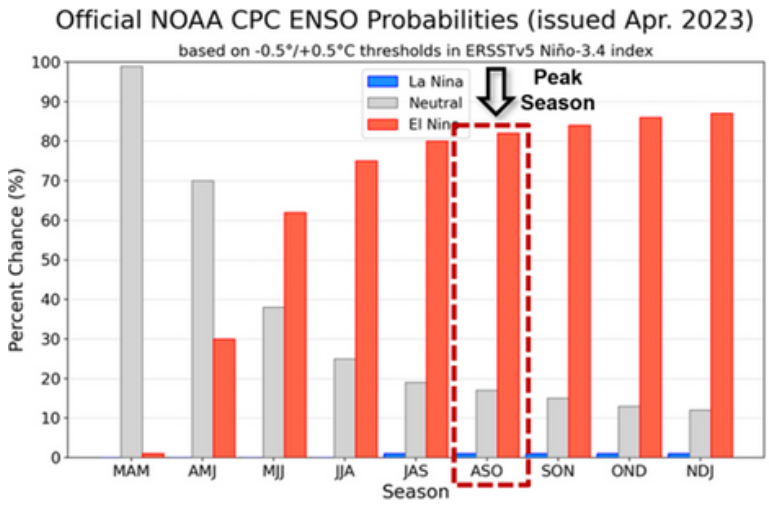


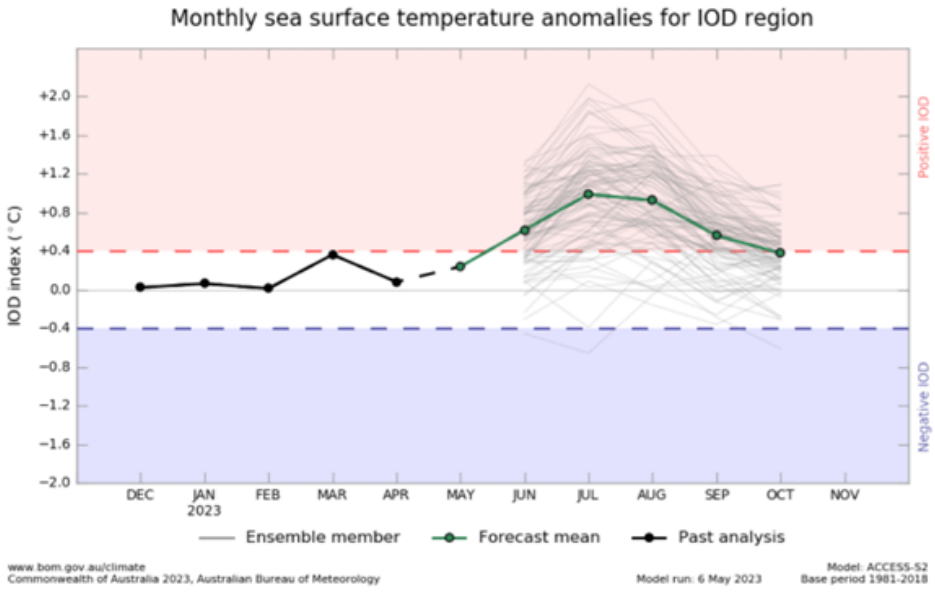
Source: https://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/

// European Model Seasonal Forecast

Each year, the European model produces seasonal tropical cyclone forecasts around the world. For 2023, the European model is predicting 20.6 named storms through November (normal is 21.1). As for typhoons, the European model is predicting a total of 12.1 through November (normal is 13.2). In general, the European model is predicting that activity will be about 90% of normal through November.

// 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 positive (warm) phase through the summer. During a positive phase, air tends to rise over the Indian Ocean and sink over the western Pacific (particularly the South China Sea). This suppresses typhoon activity in the West Pacific basin. A positive IOD could be a significant inhibiting factor this season.



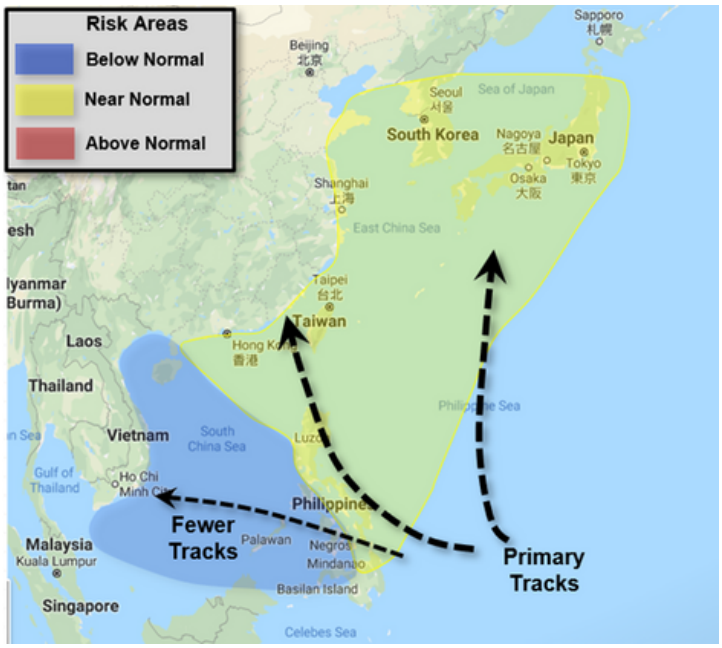
Source: http://www.bom.gov.au/climate/enso/#tabs=Indian-Ocean

// May Forecast

Most seasonal predictors are indicating that activity across the West Pacific will be a little below normal this season. An El Niño typically inhibits activity, but there is a question about its strength this summer and fall. Sinking air in the South China Sea due to the positive Indian Ocean Dipole combined with a developing El Niño could limit significant typhoon activity there. The European model is predicting a slightly below-normal season in the basin. Considering all of these factors, we think that activity will be a little below normal this year. Stronger typhoons may be concentrated farther north and east than is typical, threatening southeast China through Japan more than Vietnam.

2023 Season
23 Named Storms (-)
11 Typhoons (-)
7 Intense Typhoons (-)

30-yr Average
26 Named Storms
16 Typhoons
9 Intense Typhoons



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