

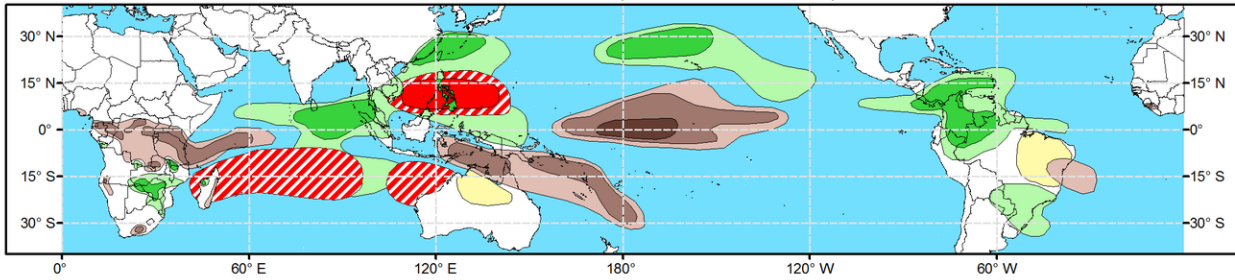


Global Tropics Hazards Outlook

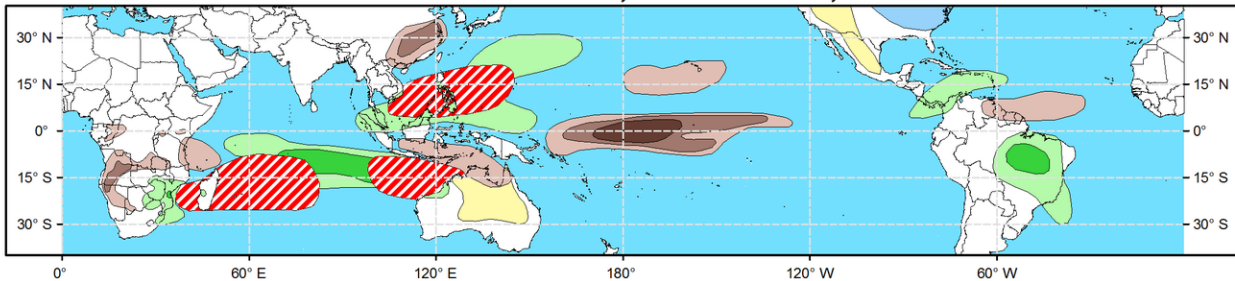
Climate Prediction Center



Week 2 - Valid: Jan 01, 2025 - Jan 07, 2025



Week 3 - Valid: Jan 08, 2025 - Jan 14, 2025



Tropical Cyclone (TC) Formation Probability

>20% >40% >60%

Tropical Depression (TD) or greater strength

Above-Average Rainfall Probability

>50% >65% >80%

Weekly total rainfall in the Upper third of the historical range

Below-Average Rainfall Probability

>50% >65% >80%

Weekly total rainfall in the Lower third of the historical range

Above-Average Temperatures Probability

>50% >65% >80%

7-day max temperatures in the Upper third of the historical range

Below-Average Temperatures Probability

>50% >65% >80%

7-day min temperatures in the Lower third of the historical range

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Forecaster: Allgood

This product is updated once per week and targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

Recent observations indicate that the intraseasonal Madden-Julian Oscillation (MJO) remains active. Interference from both the low frequency base state and equatorial Rossby wave activity over the Maritime Continent have slowed the eastward propagation of the MJO signal considerably during the past two weeks. In fact, the CPC upper-level velocity potential based index reflects westward movement since mid-December due to the robust Rossby wave projection. Both a potentially developing La Niña event across the central Pacific and an unusually late negatively phased Indian Ocean Dipole (-IOD) event are contributing to a low frequency enhanced convective signal over the Maritime Continent, with a Rossby wave constructively interfering, while the MJO is currently propagating across the Pacific with destructive interference from the base state. Dynamical model MJO index forecasts show a fairly fast transition from the slowly propagating index to a signal over the east-central Pacific. Additional Rossby wave activity over the East Pacific, likely driven by extratropical wavebreaking onto the Equator, will help to break down the enhanced trade wind regime over the East Pacific, allowing the MJO signal to move past the destructive interference and continue propagating towards the Western Hemisphere. Dynamical models vary on the amplitude of the MJO signal over the subsequent two weeks as it crosses the Western Hemisphere and potentially returns to the Indian Ocean, with most ensemble members gradually weakening the signal. Interestingly, the suppressed phase of the MJO seems insufficient to reverse the low-level westerly wind anomalies across the Indian Ocean. Due to this persistent -IOD structure, enhanced convection is favored to persist across portions of the Indian Ocean basin and Maritime Continent despite any MJO influence. MJO activity teleconnects effectively into the northern hemisphere midlatitude pattern during the boreal winter months, with Pacific events tied to pattern changes favoring a transition towards negatively phased NAO (North Atlantic Oscillation) blocking events and increased troughing

over the eastern US. A pattern flip reflecting these signals appears likely to occur in early January.

One tropical cyclone developed during the past week, Tropical Storm Pabuk, which formed on 23 December over the South China Sea. Currently downgraded to a tropical depression, Pabuk is forecast to meander close to the southern coast of Vietnam before dissipating under unfavorable atmospheric conditions. During the Week-2 period, despite an unfavorable positioning of the MJO suppressed phase, the low frequency base state may help contribute to tropical cyclone development in a few basins. There is a 40-percent chance of development indicated in the vicinity of the Philippines, either over the northwestern Pacific or the South China Sea. Additionally, there is good model support for a potential tropical cyclone developing over the southern Indian Ocean, though ensemble members are not clustering on a single location. Development is also possible in the vicinity of the Kimberley Coast of Australia, though this region has the lowest confidence. Tropical cyclone development in all of these same regions remains possible during Week-3, with 20-percent chances depicted. As the remnant MJO signal returns to the Indian Ocean, its destructive interference will gradually decrease.

Forecasts for above- and below-average precipitation are based on an anticipated continuation of the -IOD and developing La Niña base state, and an MJO propagation across the Western Hemisphere during Week-2, and possibly the Indian Ocean during Week-3. A skill weighted consensus of dynamical model guidance was also utilized. Above-average temperatures are possible for portions of Brazil and northern Australia during Week-2, with heat persisting across Australia during Week-3. An outbreak of cold air into the central and eastern United States is favored for Week-3. For hazardous weather conditions in your area during the coming two-week period, please refer to your local NWS office, the Medium Range Hazards Forecast produced by the Weather Prediction Center, and the CPC Week-2 Hazards Outlook. Forecasts made over Africa are made in coordination with the International Desk at CPC.