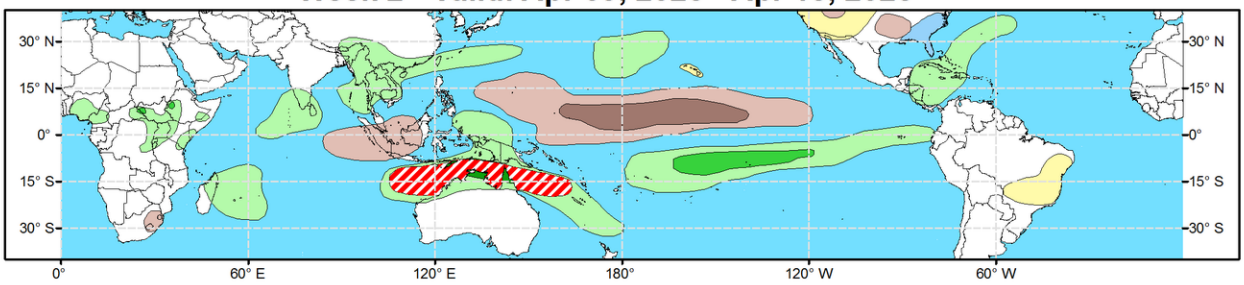
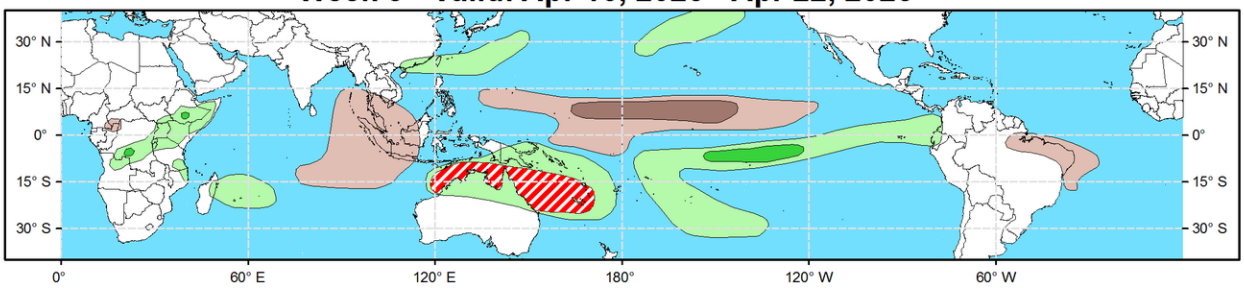
Global Tropics Hazards Outlook

Climate Prediction Center

Week 2 - Valid: Apr 09, 2025 - Apr 15, 2025



Week 3 - Valid: Apr 16, 2025 - Apr 22, 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

Issued: 04/01/2025
Forecaster: Long

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.

Based on RMM index observations, the Madden-Julian Oscillation (MJO) rapidly propagated eastward from the western Indian Ocean into the western Pacific Ocean in a little over a week from 3/15-3/24. Since then, the signal retrograded westward towards the Maritime Continent before retreating back inside the unit circle. The GEFS and ECMWF agree on a weak MJO signal switching back to an eastward propagation into the Eastern Pacific and Atlantic Oceans during Week-1 (4/2-4/8). However, by Week-2 (4/9-4/15), the signal tends to revert back to a westward propagation with the signal remaining in the unit circle and moving back into the Western Pacific. The GEFS shows a strengthening MJO signal over the Pacific Ocean during Week-3 (4/16-4/22), while the ECMWF continues a stagnant signal in the unit circle over the Western Pacific. The model forecasts for 200-mb velocity potential (VP) anomalies show that the strong divergence aloft over the Maritime Continent weakens during Week-1 and gives way to a very chaotic pattern, consistent with the RMM index forecasts. The GEFS begins to reorganize in Week-2, holding on to this enhanced convection over the Maritime Continent as it constructively interferes with the strong, low frequency signal collocated at 130E. A Wave-1 pattern fully emerges in Week-3 with the convective envelope propagating eastward into the Pacific Ocean. The ECMWF solution shows a different story with an incoherent pattern remaining in Week-2 and Week-3, and a low-frequency signal located at 80W versus the GEFS signal near 130E. Although no Wave-1 pattern exists, the MJO signal remains through the filtering and moves across the Pacific, causing some enhanced convection along the eastern Pacific Ocean in Week-3 as it interacts with the low-frequency signal. La Nina continues to show signs of weakening as warm temperature anomalies increase in the eastern Pacific and approach lower ocean depths. This may be causing the dueling low-frequency signals between the models.

After becoming a Tropical Cyclone (TC) on 3/24, TC Courtney (27S) continued moving westward into the open ocean of the South Indian basin before turning southward. The Joint Typhon Warning Center (JTWC) issued its final warning on the system on 4/1. TC Dianne (28S) formed off the Kimberley Coast of Australia on 3/28 after being tracked by the JTWC as a depression since 3/25. It quickly made landfall a day later in Australia, southeast of Kooland Island. During the Week-1 period, the ocean basins remain fairly quiet with little chance of tropical cyclogenesis.

Because of the weak and conflicting MJO pattern, TC forecasts rely heavily on model guidance. During Week-2, the ECMWF and GEFS both show an increased chance of TC development along Northern Australia between 10-20S from northwest of the Kimberley coast eastward into the South Pacific Ocean. Low-level westerly anomalies remain fairly strong in this region in both the CFS and ECMWF, signaling a favorable region for TC development. By Week-3, the signal has shifted further eastward into the South Pacific Ocean. This is consistent with the stronger MJO signal in the GEFS over northern Australia during both Week-2 and Week-3. Climatologically, mid-April is the quietest period globally for tropical cyclogenesis. Between this and the conflicting MJO signal, only a 20-40% chance of development is warranted for both time periods. There is a weak indication of formation east of the Philippines in Week-2; however, probabilities remain below 20%.

Like the TC forecasts, forecasts for enhanced and suppressed precipitation are based heavily on a skill weighted consolidation of the GEFS, CFSv2, and ECMWF ensemble forecast systems, with considerations of historical MJO composites for phases 5-7 during Mar-May and the lingering La Nina influence. The dry signal associated with La Nina remains in the Pacific but only north of the equator. A wetter signal that has appeared over the past month continues south of the equator and into the South Pacific. The increased chance for above-average precipitation north of Australia persists into the Week 2-3 time period. Chances for above-average temperatures remain in southeast Brazil near the Atlantic coast.

For hazardous weather conditions in your area during the next two weeks, please refer to your local NWS office, the Medium Range Hazards Forecast from the Weather Prediction Center (WPC), and the CPC Week-2 Hazards Outlook. Forecasts issued over Africa are made in coordination with the International Desk at CPC.