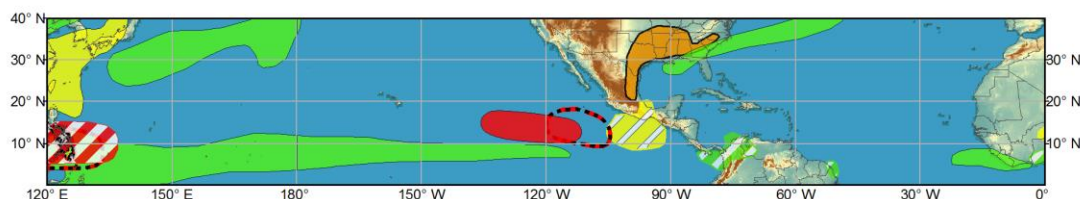




Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Jul 09 2022 - Jul 12 2022



Week 2 - Valid: Jul 13 2022 - Jul 19 2022



Confidence
High Moderate

Produced: 07/08/2022
Forecaster: Allgood

Tropical Cyclone Formation [Red box with diagonal lines] Development of a tropical cyclone (tropical depression - TD, or greater strength).

Prior TC Formation Outlook [Red dashed box] Tropical cyclone outlook from previous release.

Above-average rainfall [Green box with diagonal lines] Weekly total rainfall in the upper third of the historical range.

Below-average rainfall [Yellow box with diagonal lines] Weekly total rainfall in the lower third of the historical range.

Above-normal temperatures [Orange box with diagonal lines] 7-day mean temperatures in the upper third of the historical range.

Below-normal temperatures [Blue box with diagonal lines] 7-day mean temperatures in the lower third of the historical range.

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



Robust Madden-Julian Oscillation (MJO) activity constructively interfering with a somewhat westward shifted La Nina base state remains apparent in both the RMM-based and CPC velocity potential based MJO indices as well as recent observations. The GEFS RMM index forecast has become increasingly bullish depicting the MJO enhanced convective envelope reaching the West Pacific, though there continue to be indications of equatorial Rossby wave interference with the signal. The ECMWF is generally weaker and faster with the signal, and most of its ensemble members show weakening as the signal crosses the Pacific, followed by a quick return to the Western Hemisphere.

MJO activity over the Maritime Continent is typically associated with reduced tropical cyclone (TC) activity over the East Pacific and Atlantic basins. Despite this suppressed signal at the subseasonal scale, tropical wave activity over the East Pacific will provide several opportunities for development during the remainder of Week-1 and Week-2 periods. Hurricane Bonnie has now crossed west of 120W, entering a region of drier air and cooler SSTs, which should promote rapid weakening due to loss of convection. A tropical wave south of Mexico has a high potential for tropical cyclogenesis over the next 4 or 5 days, with the latest tropical weather outlook (TWO) from the National Hurricane Center (NHC) showing a 70 percent chance of formation by Day-5. During Week-2, additional tropical cyclone development is

possible south of Mexico. No development is anticipated over the Atlantic basin, though brief closed low formation in the vicinity of the coastal Carolinas in association with a stalled frontal boundary cannot be ruled out. There is little change to the forecast thinking across the West Pacific, though dynamical models have backed off somewhat on the potential for a higher latitude formation in the vicinity of Guam.

Forecasts for above- and below-average rainfall were updated to reflect the latest dynamical model guidance and analyses of various modes of tropical variability.

The original discussion released on 5 July 2022 follows.

The Madden-Julian Oscillation (MJO) signal, based on both the RMM-based and CPC velocity potential indices, became more amplified during the past week with a signal propagating from the Indian Ocean to the Maritime Continent. The upper-level velocity potential field currently exhibits a robust Wave -1 pattern, consistent with MJO activity, and other fields such as zonal wind anomalies and OLR anomalies are also broadly consistent with a propagating MJO signal. The MJO is currently constructively interfering with the La Niña base state, with strongly enhanced trade winds now extending across the entire tropical Pacific basin. Despite the enhanced trade winds, enhanced convection was recently observed across the tropical North Pacific near 10N, aided in part by strong equatorial Rossby wave activity. Enhanced convection associated with both La Nina and the MJO is feeding into the Asian monsoon, and is sparking widespread flooding across southeastern Australia, including the Sydney metropolitan area.

Dynamical model MJO index forecasts indicate uncertainty, with multiple GEFS ensemble members depicting robust MJO activity propagating to the West Pacific, but others showing a rapid weakening of the signal. The ECMWF is generally slower and weaker with the signal, with interference from equatorial Rossby wave activity and the La Nina base state preventing robust eastward propagation. As the suppressed phase of the MJO crosses the Western Hemisphere, conditions may become broadly less favorable for tropical cyclone (TC) development, while a healthy monsoon trough extending into the West Pacific may provide opportunities for TC formations.

During the past week, four tropical cyclones formed globally. Typhoon Chaba developed over the South China Sea and made landfall over southern China. Tropical Storm Aere formed northeast of the Philippines and brought flooding rains to parts of Japan. Hurricane Bonnie formed over the southwestern Caribbean and crossed westward over Central America, emerging over the East Pacific and strengthening to hurricane intensity. Hurricane Bonnie is expected to remain well south of Mexico as it moves generally westward towards cooler waters. Tropical Storm Colin formed briefly near the coast of South Carolina, bringing spotty convection and some gusty winds to the South Atlantic coast. During Week-1, no additional tropical cyclones are favored to develop across the Atlantic basin. Across the West Pacific, an enhanced monsoon trough may provide a favorable environment for tropical cyclogenesis, with the best chances for formations at a fairly low latitude east of the Philippines or across the South China Sea. This region may remain active into Week-2. Dynamical models indicate a potential for tropical cyclone development further east in the vicinity of Guam during Week-2 as well. Across the East Pacific, conditions may become increasingly favorable for TC formation across the East Pacific during late Week-1 into Week-2, with dynamical models indicating one or more potential TCs forming south of Mexico.

Forecasts for above- and below-average rainfall are based on tropical cyclone forecast tracks, dynamical model consensus, and precipitation composites of canonical MJO events with convectively active phase over the Maritime Continent and West Pacific. An enhanced monsoon trough is favored to extend from South Asia southeastward across Southeast Asia, the equatorial Maritime Continent, and across the western and central North Pacific. North of this region, dry, hot conditions are favored across mainland China. Widespread heavy rainfall is favored to continue across eastern Australia, the Coral Sea, and New Zealand, particularly during Week-1. This rainfall may aggravate the ongoing serious flooding situation in New South Wales. Enhanced rainfall across the western North Atlantic is expected to continue for the next two weeks, while hot conditions will persist across the central CONUS.

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.