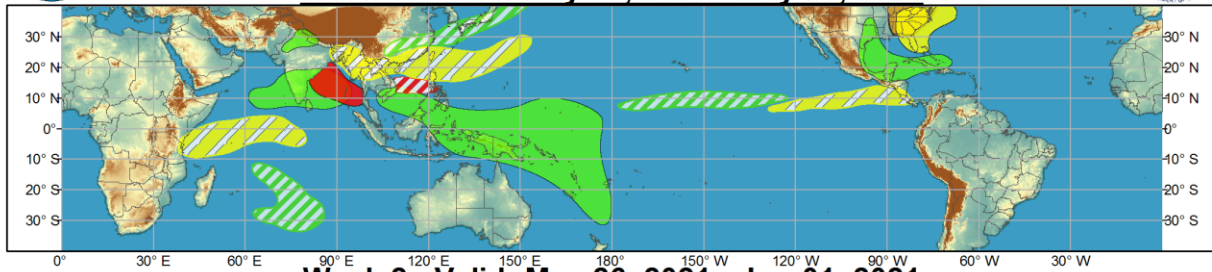




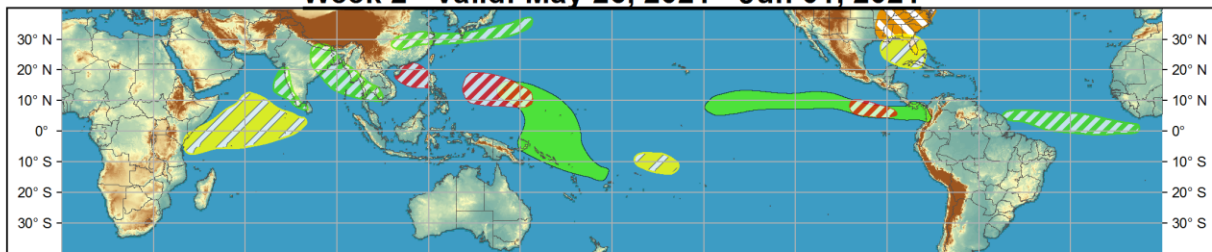
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: May 19, 2021 - May 25, 2021



Week 2 - Valid: May 26, 2021 - Jun 01, 2021



Confidence
High Moderate

Tropical Cyclone Formation			Development of a tropical cyclone (tropical depression - TD, or greater strength).
Above-average rainfall			Weekly total rainfall in the upper third of the historical range.
Below-average rainfall			Weekly total rainfall in the lower third of the historical range.
Above-normal temperatures			7-day mean temperatures in the upper third of the historical range.
Below-normal temperatures			7-day mean temperatures in the lower third of the historical range.

Product is updated once per week, except from 6/1 - 11/30 for the region from 120E to 0, 0 to 40N. The product targets broad scale conditions integrated over a 7-day period for US interests only. Consult your local responsible forecast agency.

Produced: 05/18/2021

Forecaster: Harnos



Multiple modes of canonical tropical variability are currently active across the low latitudes. One notable exception is the La Nina that has persisted since last July-September, with the final La Nina Advisory issued last Thursday indicating the demise of the event. Nevertheless, anomalous upper-level (lower-level) westerlies (easterlies) persist across the tropical Pacific, although cooler than normal water is limited to very shallow depths over the equatorial Pacific. At the intraseasonal timescale, the Madden-Julian Oscillation (MJO) is presently analyzed over the Indian Ocean. The phase speed of the eastward-propagating envelope is near the Kelvin wave/MJO interface, while there also appears to be a slower-moving feature embedded within this signal that may be driven by extratropical wavebreaking. RMM index forecasts show the intraseasonal envelope rapidly crossing the eastern Indian Ocean and Maritime Continent this week, before reaching the West Pacific by the end of May. Most interesting with this evolution is the likely projections into RMM Phases 4 and 5, given typical difficulty among dynamical model guidance in shifting the MJO across the Maritime Continent, while the low-frequency removal in the RMM index coinciding with the conclusion of La Nina favors negative RMM1 values (essentially shifting the diagram left, away from Phases 4 and 5). Model guidance also portrays a westerly wind burst east of the Maritime Continent as the MJO envelope reaches the area that would potentially further push the Pacific toward ENSO-neutral conditions by the initiation of another downwelling oceanic Kelvin wave. In addition to the ongoing intraseasonal activity over the Indian Ocean, an

atmospheric Kelvin wave is presently over the East Pacific while multiple equatorial Rossby waves are analyzed over the Eastern Hemisphere.

A pair of tropical cyclones (TCs) developed last week. Tropical Storm Three formed over the West Pacific near 7N/130E on May 12th. The system remained fairly weak and tracked westward before dissipating on the 15th. CPC has been monitoring the Arabian Sea for TC formation for the past three weeks, which finally materialized with TC Tauktae developing on the 14th near 12N/72E. Tauktae paralleled the western coast of India before making landfall in the state of Gujarat with accompanying 110 knot winds on the 17th. Tauktae brought widespread heavy rains and high winds to parts of western India, including over 9 inches of rainfall within 24 hours for Mumbai. Unfortunately, Tauktae has resulted in multiple fatalities and damaged over 3,000 homes while the full impacts of the system continue to emerge.

The eastward shifting intraseasonal variability currently over the Eastern Hemisphere, as outlined above, favors increased TC formation chances initially over the Indian Ocean and South China Sea which then shifts to the South China Sea and West Pacific by late May. Confidence is high for a system to develop over the Bay of Bengal next week, with the GFS potentially having this system not form until early in Week-2. Regardless, there is enough support among the ECMWF and GEFS ensembles for high confidence of tropical cyclone formation here during Week-1. Moderate confidence also exists for two possible instances of TC development over the South China Sea for both Week-1 and Week-2, with the highlighted area shifting north with time. The other area highlighted on the map for moderate confidence of TC formation spans from Guam and the Northern Marianas east-southeastward toward to near 10N/165E where Rossby wave activity is anticipated. Lastly, moderate confidence exists for tropical cyclogenesis across a region between approximately 5-10N and 87-102W over the East Pacific tied to the favorable large-scale environment from the Kelvin wave passage coupled with improving climatological background conditions.

The precipitation outlook during the next two weeks is based on a consensus among the CFS, GEFS, and ECMWF ensemble means, anticipated TC tracks, tropical waves, and MJO precipitation composites. For hazardous weather concerns during the next two weeks across the U.S., please refer to your local NWS Forecast Office, the Weather Prediction Center's Medium Range Hazards Forecast, and CPC's Week-2 Hazards Outlook. Forecasts over Africa are made in consultation with the International Desk at CPC and can represent local-scale conditions in addition to global scale variability.