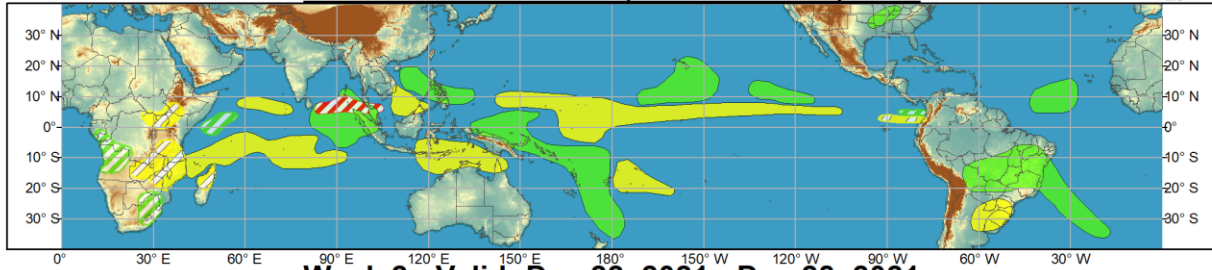




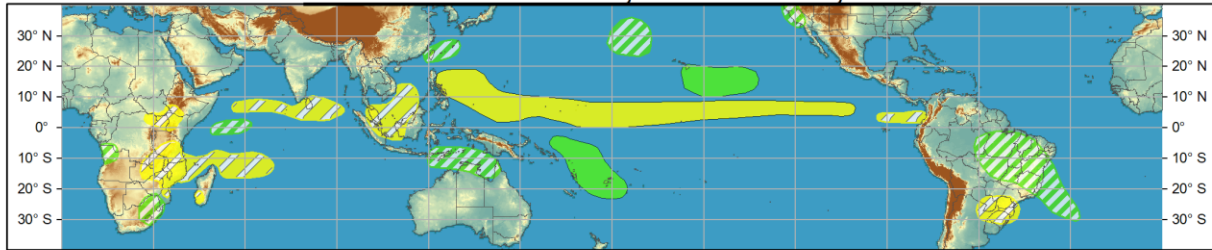
Global Tropics Hazards and Benefits Outlook - Climate Prediction Center



Week 1 - Valid: Dec 15, 2021 - Dec 21, 2021



Week 2 - Valid: Dec 22, 2021 - Dec 28, 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: 12/14/2021

Forecaster: Collow



An amplified Madden Julian Oscillation (MJO) signal continues to propagate across the western Pacific, and is associated with a low level (850-hPa) westerly wind burst that is ongoing over parts of the Maritime Continent and the far West Pacific. The MJO is forecast to destructively interfere with the low frequency La Nina base state, which may slow down or even slightly retrograde its propagation in the near term as indicated by the GEFS and ECMWF ensembles. However, both models indicate enhanced upper level divergence extending east of the Date Line, suggestive of renewed eastward propagation of the intraseasonal signal through RMM phases 7 and 8, by week-2. Although, there remains considerable uncertainty due to the large ensemble spread, it appears that this MJO event has the potential to advect positive subsurface ocean temperature anomalies over the West Pacific eastward across the remainder of the equatorial Pacific, which could result in a weakening of the negative sea surface temperature anomalies over the Nino regions over the next 2 weeks.

Tropical Storm Rai developed over the West Pacific Basin on 12/13, and is forecast to reach typhoon strength before impacting the Philippines later this week. It is forecast to re-emerge over the South China Sea, and possibly track close to southeastern China early in week-2. In the Southern Hemisphere, Cyclone Ruby developed over the Coral Sea on 12/12, and impacted New Caledonia at 60-knot

intensity. The system is forecast to continue to track southeastward over open waters and weaken, remaining to the east of New Zealand. There is moderate confidence for additional tropical cyclone (TC) development over the Bay of Bengal during week-1 as enhanced upper-level velocity potential anomalies are forecast to persist over the region in the wake of the departing MJO. The evolution differs between the GEFS and the ECMWF, with several GEFS ensemble members indicating TC development near Malaysia or southern Thailand with a west to northwest track, and the ECMWF ensemble favoring a system to develop closer to Sri Lanka and track eastward. While these models depict formation on opposite sides of the Bay of Bengal, the projected tracks converge near the Andaman and Nicobar Islands, and a broad moderate risk area is designated to account for the scenarios depicted in the GEFS and ECMWF models.

The precipitation outlook during the next two weeks is based on a consensus of GEFS, CFS, and ECMWF guidance, and most likely TC tracks. A high confidence for above normal rainfall is depicted across portions of the east-central contiguous U.S., where the Weather Prediction Center forecasts precipitation totals of 1-4 inches over areas that were significantly impacted by tornadoes this past weekend. Troughing forecast to amplify across the East Pacific by the beginning of week-2 favors moderate confidence for above normal precipitation across the western contiguous U.S. during week-2, particularly over California. Above normal precipitation is also likely for southern and eastern portions of the Hawaiian Islands. A trend toward drier conditions is forecast during week-2 over portions of the Indian Ocean, Maritime Continent, and Western Pacific, as the MJO propagates further away from these areas leading to more suppressed convection.

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.