

## Summary

STY Mangkhut is currently an intensity of 150 kt, and is past its closest approach to Palau at a current location of 14N, 134E. Large significant wave heights and convection associated with STY Mangkhut's trailing rainbands are the primary threats that will impact Palau for the next 24-48 h. The next potential TD that may impact the area of operation around 1200Z 17 September is currently being spun up in the 12Z GFS, but is kept broad and disorganized in the 12Z ECMWF. Confidence in the genesis of the potential TD is currently low given the model disparity, but it is still being closely monitored. Winds over Palau from the SW between 25-35 knots are expected during the next 24 h. Additionally, significant wave heights at Palau are forecasted to remain between 9-15 ft during the next 24 h. STY Mangkhut's passage will also provide an increased chance for organized convection over Palau as its trailing rainbands move through the area during the next 24 h. Conditions forecasted over Palau at the expected departure time (0000 UTC 14 September): A chance for light, scattered precipitation with winds from the S-SW at 10-20 knots and significant wave heights between 7-12 ft.

**Day One (24 hr) Outlook:** As deep convection continues to spiral off the SE side of STY Mangkhut, intermittent bouts of organized deep convection are expected over Palau. Winds from SW between 25-35 knots are expected to decrease, becoming more southerly between 15-25 knots by the end of the 24-h forecast period. Both COAMPS and FNMOC WW3 forecast significant wave heights remaining anywhere between 9-15 ft throughout the 24-h forecast period.

**Day Two (48 hr) Outlook:** COAMPS and GFS show a chance for scattered convection over Palau, gradually clearing throughout the 24-48 h forecast period. GFS shows decreasing wind speeds, remaining southerly between 10-15 knots throughout the 24-48 h forecast period. COAMPS favors slightly higher wind speeds near the end of the forecast period, showing S winds between 20-25 knots. Both COAMPS and FNMOC WW3 forecast significant wave heights to remain 9-12 ft during the beginning of the 24-48 h forecast period, decreasing to anywhere between 7-12 ft near the end.

**Extended Outlook:** Winds will continue to gradually weaken, becoming E-SE between 5-15 knots, and scattered precipitation is expected near Palau throughout the 48-72 h forecast period. FNMOC WW3 shows significant wave heights near Palau between 7-12 ft at the beginning of the 48-72 h forecast period, decreasing to between 5-7 ft near the end. Significant wave heights will then continue to decrease, reaching 3-5 ft during the 72-96 h forecast.

## Discussion

**TCs:** STY Mangkhut has further intensified to a current intensity of 150 kt and is undergoing an eyewall replacement cycle, and it is now past its closest approach to Palau. STY is currently

located at approximately 14N, 134E, and its forecast track is slightly further south than yesterday. STY is now expected to make landfall in northern Luzon in the 48-36 h timeframe. The biggest threats associated with STY Mangkhut are Mangkhut-enhanced convection and significant wave heights.

The next potential TD is currently only being spun up in the last three runs of the GFS (00Z, 06Z, 12Z) in the wake of STY Mangkhut around 15N, 142E, but it is not spun up in any ECMWF runs. Instead, the 12Z ECMWF keeps it as a broad area of disorganized convection. In both models, this potential TD would make its closest approach to the area of operation on approximately 12Z 17 September at approximately 15N, 134E. Confidence in genesis of this potential TD is currently low, but it is being monitored.

**Convection:** The Himawari-8 IR satellite imagery currently shows an organized area of convection directly to the E-NE of Palau in association with STY Mangkhut's trailing rainbands. Intermittent bouts of organized convective activity are expected to persist throughout the 24-h forecast period, spiraling off the SE side of Mangkhut. As STY Mangkhut continues to track W-NW away from Palau, organized convection will diminish and a chance for scattered precipitation will persist throughout the 24-72 h forecast.

**MJO/BSISO:** The MJO forecast provided by the ECMWF shows the two week period beginning on 11 September, and the BOM has been updated to show the two week period beginning on 09 September. The two models show a weak-amplitude MJO signal persisting throughout their respective two week forecast periods. The BSISO forecast from ECMWF was updated and shows the 10-29 September forecast period while the BOM has not been updated and continues to show the 09-28 September forecast period. Both models hint at a weak-amplitude BSISO1 signal in phase 3 and BSISO2 signal in phase 8 for the 0-4 day forecast period and then diverge in their representation thereafter. ECMWF favors a weak-amplitude BSISO1 signal in phase 4 and BOM favors a weak-amplitude BSISO1 signal in phase 2 for the 5-9 day forecast.

**SSTs:** Sea surface temperatures are expected to be between 29-31 C.

**Currents and Wave Heights:** Significant wave heights at Palau are forecasted by both COAMPS and FNMOC WW3 to remain 9-12 ft during the 24-h forecast period. Significant wave heights are forecasted to decrease thereafter, remaining anywhere between 7-12 ft around the scheduled 0000 UTC 14 September departure time.

FORECASTERS: MARTINEZ, CASAS (DELAP)

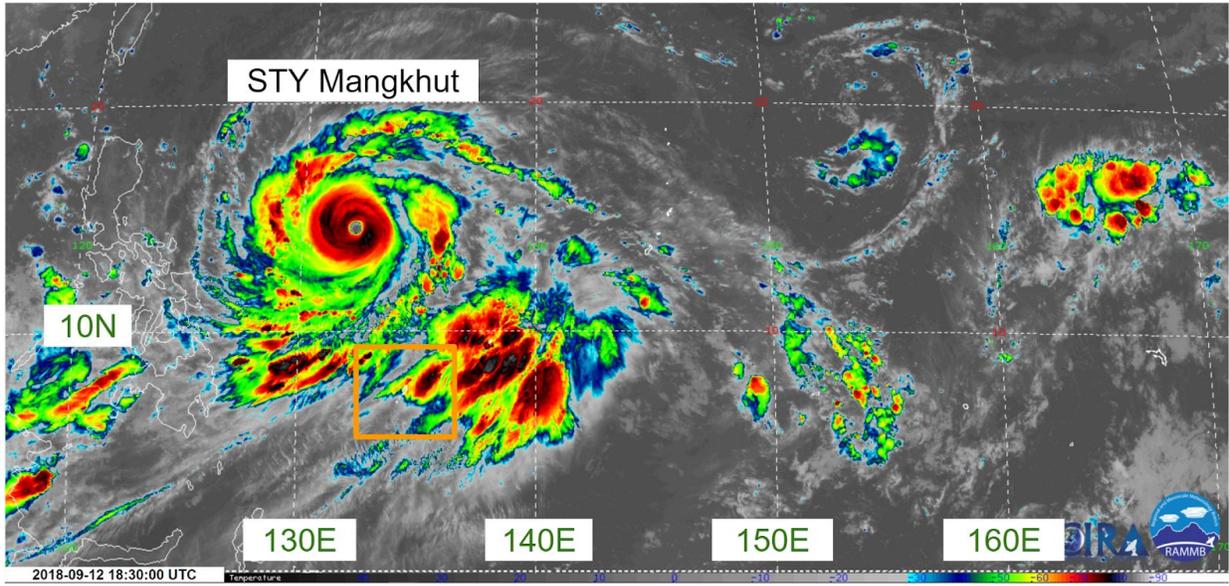


Fig. 1. Himawari IR imagery (10.4 microns) valid at 1800 UTC 12 September 2018. [1]

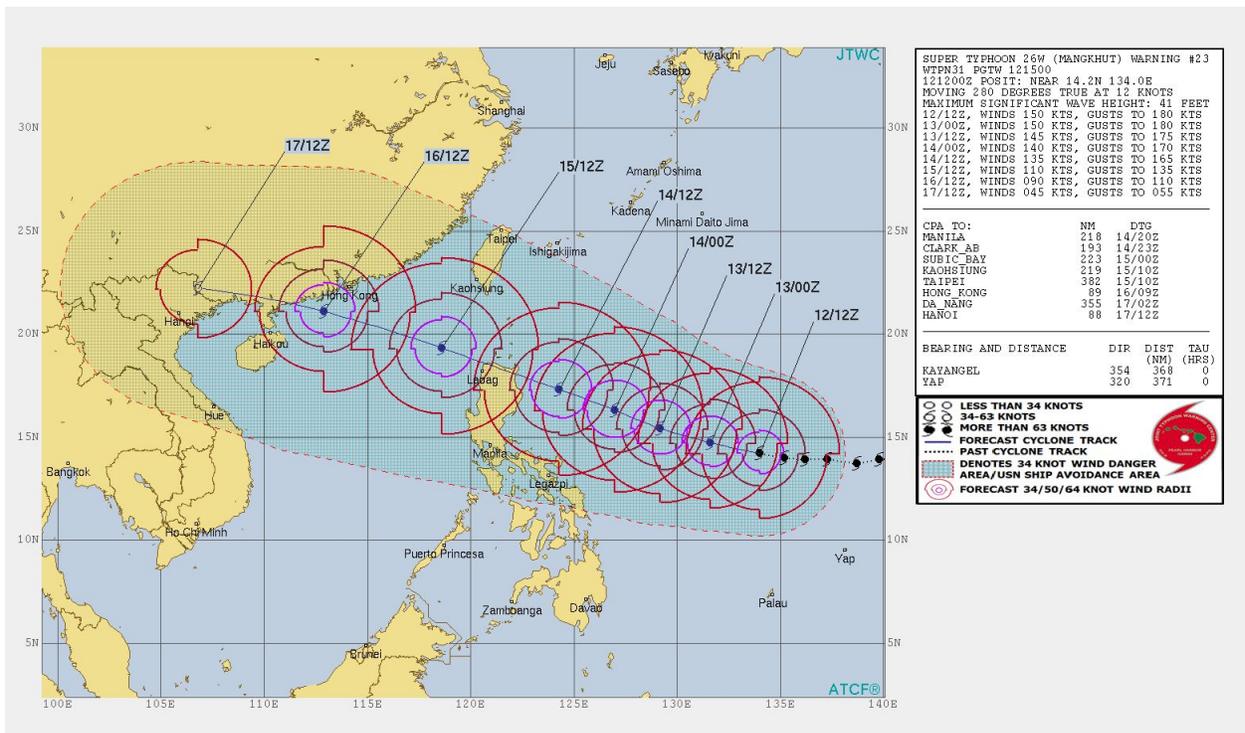


Fig 2. JTWC forecasted track/intensity for TY Mangkhut at 1200 UTC 12 September 2018. [2]

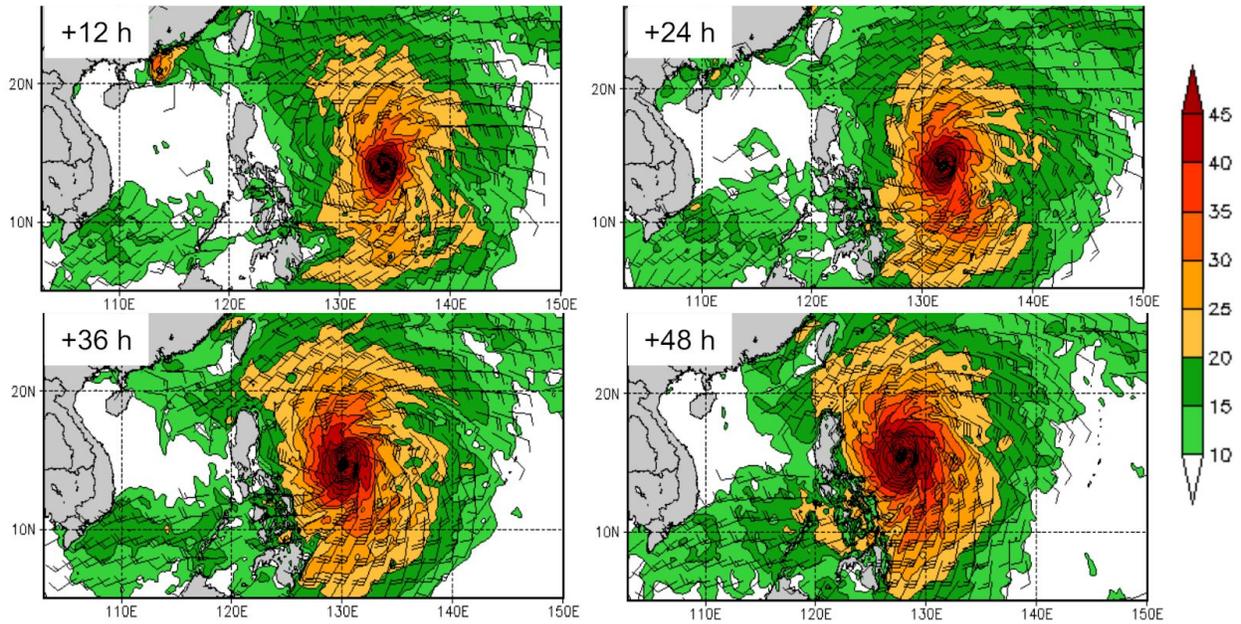


Fig. 3. COAMPS forecasted 10-m wind speed (shading, knots) and direction (barbs) and MSLP (contours) initiated at 0000 UTC 12 September 2018 and valid at (top left) 1200 UTC 12 September, (top right) 0000 UTC 13 September, (bottom left) 1200 UTC 13 September, and (bottom right) 0000 UTC 14 September.

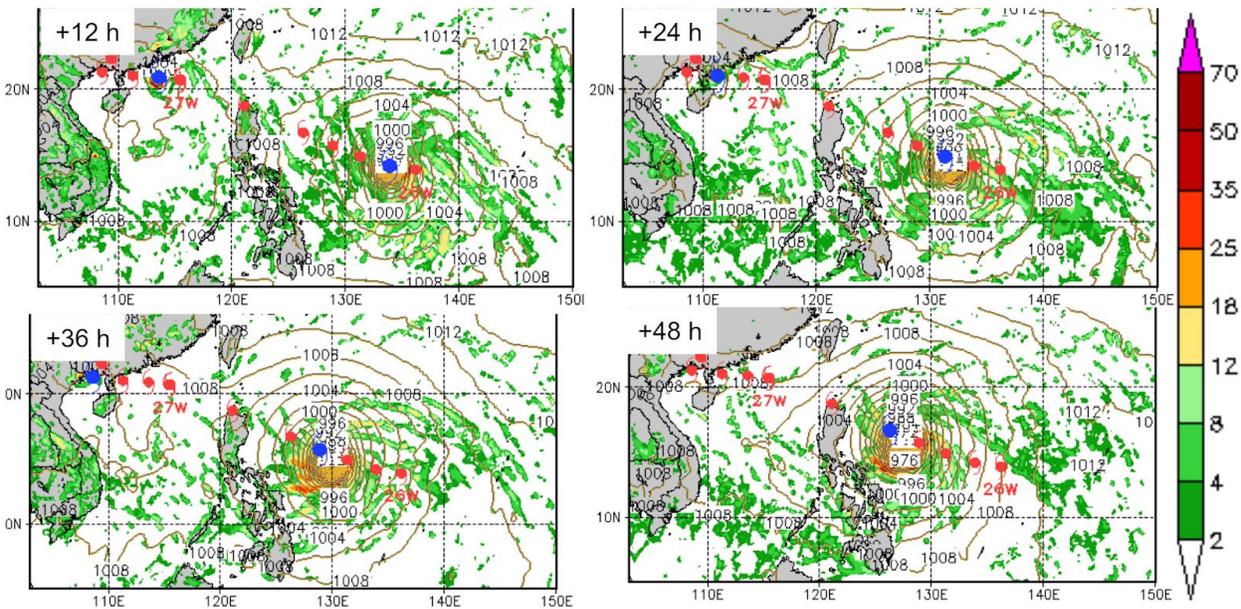


Fig 4. COAMPS 3-hourly precipitation (shading, mm) and MSLP (contours) initiated at 0000 UTC 12 September 2018 and valid at (top left) 1200 UTC 12 September, (top right) 0000 UTC 13 September, (bottom left) 1200 UTC 13 September, and (bottom right) 0000 UTC 14 September.

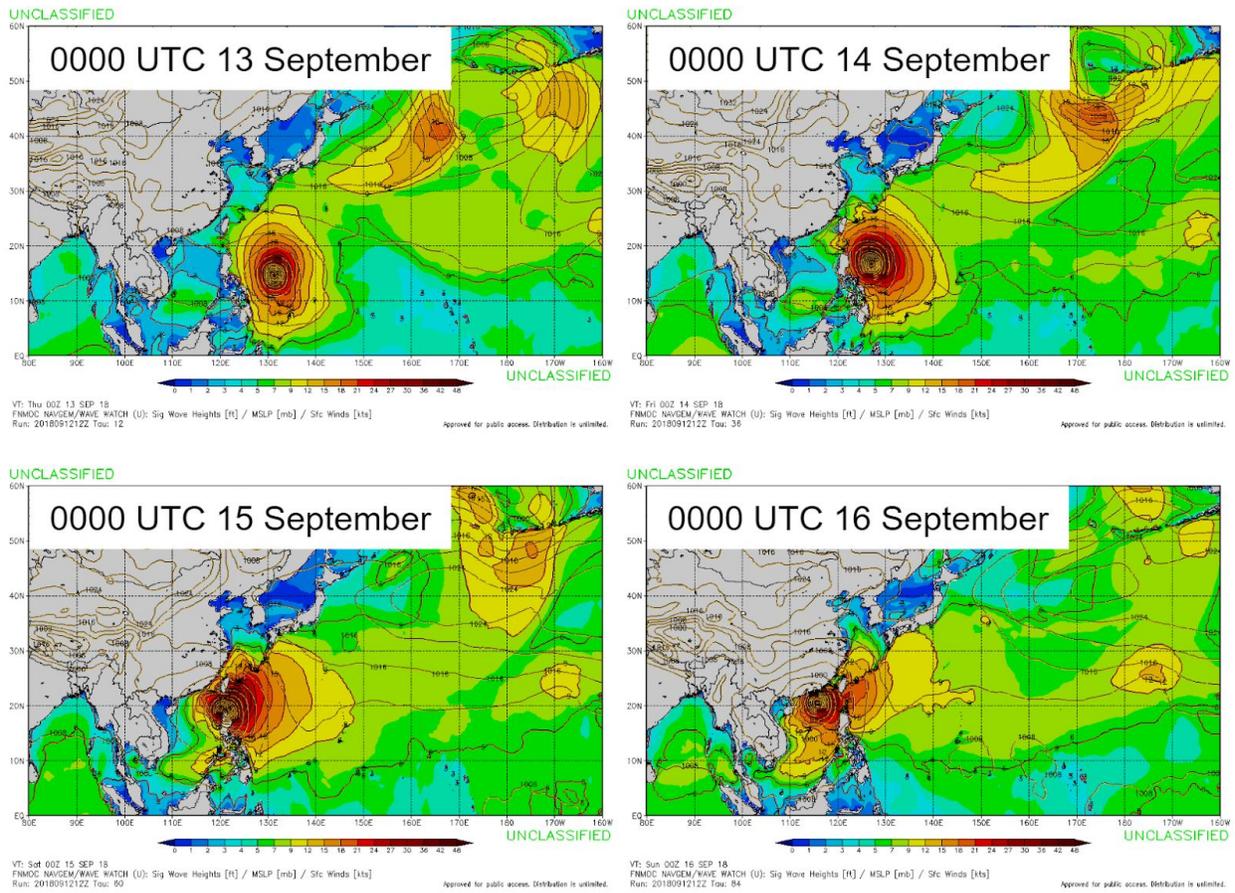


Fig. 5. FNMOC WW3 significant wave height forecast initiated at 1200 UTC 12 September and valid at (top left) 0000 UTC 13 September, (top right) 0000 UTC 14 September, (bottom left) 0000 UTC 15 September, and (bottom right) 0000 UTC 16 September. [5]