Typhoon KOTO

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1. TYPHOON 33W (KOTO) WARNING NR 010
   01 ACTIVE TROPICAL CYCLONES IN NORTHWESTPAC
   MAX SUSTAINED WINDS BASED ON ONE-MINUTE AVERAGE
   WIND RADII VALID OVER OPEN WATER ONLY
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   WARNING POSITION:
   270000Z --- NEAR 13.2N 113.9E
     MOVEMENT PAST SIX HOURS - 270 DEGREES AT 09 KTS
     POSITION ACCURATE TO WITHIN 060 NM
     POSITION BASED ON CENTER LOCATED BY SATELLITE
   PRESENT WIND DISTRIBUTION:
   MAX SUSTAINED WINDS - 080 KT, GUSTS 100 KT
   WIND RADII VALID OVER OPEN WATER ONLY
   RADIUS OF 064 KT WINDS - 015 NM NORTHEAST QUADRANT
                            015 NM SOUTHEAST QUADRANT
                            015 NM SOUTHWEST QUADRANT
                            025 NM NORTHWEST QUADRANT
   RADIUS OF 050 KT WINDS - 040 NM NORTHEAST QUADRANT
                            030 NM SOUTHEAST QUADRANT
                            030 NM SOUTHWEST QUADRANT
                            050 NM NORTHWEST QUADRANT
   RADIUS OF 034 KT WINDS - 180 NM NORTHEAST QUADRANT
                            060 NM SOUTHEAST QUADRANT
                            060 NM SOUTHWEST QUADRANT
                            170 NM NORTHWEST QUADRANT
   REPEAT POSIT: 13.2N 113.9E
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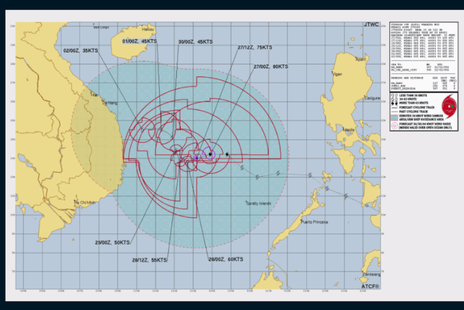

Tropical Cyclone SENYAR

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1. TROPICAL CYCLONE 04B (SENYAR) WARNING NR 007
   02 ACTIVE TROPICAL CYCLONES IN NORTHIO
   MAX SUSTAINED WINDS BASED ON ONE-MINUTE AVERAGE
   WIND RADII VALID OVER OPEN WATER ONLY
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   WARNING POSITION:
   270000Z --- NEAR 3.6N 100.4E
     MOVEMENT PAST SIX HOURS - 090 DEGREES AT 05 KTS
     POSITION ACCURATE TO WITHIN 060 NM
     POSITION BASED ON CENTER LOCATED BY SATELLITE
   PRESENT WIND DISTRIBUTION:
   MAX SUSTAINED WINDS - 025 KT, GUSTS 035 KT
   WIND RADII VALID OVER OPEN WATER ONLY
   DISSIPATED AS A SIGNIFICANT TROPICAL CYCLONE OVER WAT
   REPEAT POSIT: 3.6N 100.4E
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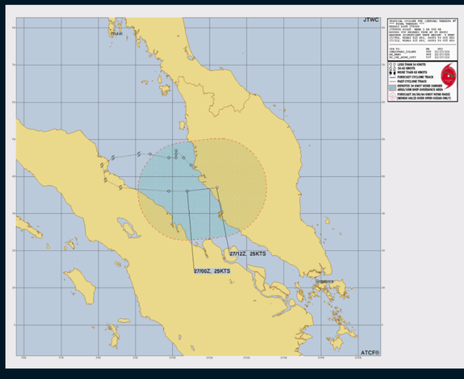

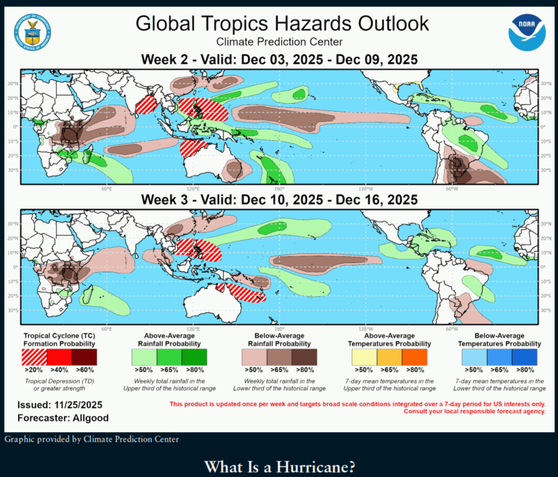

Graphic provided by Climate Prediction Center

What Is a Hurricane?

A hurricane (or typhoon, or severe tropical cyclone), the strongest storm on Earth, is a cyclonic (rotary) storm that derives its energy from cloud formation and rainfall, unlike frontal cyclones that derive their power from a temperature gradient.

A hurricane begins as a tropical depression with a sustained wind speed of less than 39 mph (35 knots; 63 km/hr). As the system strengthens, it becomes a tropical storm with winds from 39 to 73 mph (35-63 knots; 63-118 km/hr). Tropical storms are named in the Atlantic, East, Central and Northwest Pacific, in the South Indian Ocean, and in the Arabian Sea. When the winds are sustained (based on a one-minute average) at 74 mph (64 knots; 119 km/hr), the storm becomes: In the Atlantic Ocean, East Pacific, Central Pacific (east of the International Dateline) and Southeast Pacific (east of 160°E) a **Hurricane**; in the Northwest Pacific (west of the International Dateline) a **Typhoon**; in the Southwest Pacific (west of 160°E) and Southeast Indian Ocean (east of 90°E) a **Severe Tropical Cyclone**; in the North Indian Ocean a **Severe Cyclonic Storm**; and in the Southwest Indian Ocean (west of 90°E) a **Tropical Cyclone.**

The Saffir-Simpson Hurricane Scale

Category 1 – 64-82 knots (74-95 mph; 119-153 km/h). Damage is limited to foliage, signage, unanchored boats and mobile homes. There is no significant damage to buildings. The main threat to life and property may be flooding from heavy rains.

Category 2 – 83-95 knots (96-110 mph; 154-177 km/h). Roof damage to buildings. Doors and windows damaged. Mobile homes severely damaged. Piers damaged by storm surge. Some trees blown down, more extensive limb damage.

Category 3 – 96-112 knots (111-129 mph; 178-208 km/h). Major Hurricane. Structural damage to some buildings. Mobile homes are completely destroyed. Roof damage is common. Storm surge begins to cause significant damage in beaches and harbors, with small buildings destroyed.

Category 4 – 113-136 knots (130-156 mph; 209-251 km/h). Structural failure of some buildings. Complete roof failures on many buildings. Extreme storm surge damage and flooding. Severe coastal erosion, with permanent changes to the coastal landscape not unheard of. Hurricane force winds extend well inland.

Category 5 – 137+ knots (157+ mph; 252+ km/h). Complete roof failure on most buildings. Many buildings destroyed, or structurally damaged beyond repair. Catastrophic storm surge damage. In the Northwest Pacific, a typhoon that reaches 150 mph (241 km/hr) is called a Super Typhoon.

SAFFIR-SIMPSON SCALE

Category	Knots	MPH	KM/H	Damage
1	64-82	74-95	119-153	Minimal
2	83-95	96-110	154-177	Moderate
3	96-112	111-129	178-208	Extensive
4	113-136	130-156	209-251	Extreme
Super Typhoon	130+	150+	241+	Catastrophic
5	137+	157+	252+	Catastrophic

Storm Surge

Historically, storm surge is the primary killer in hurricanes. The exact storm surge in any given area will be determined by how quickly the water depth increases offshore. In deep-water enviroments, such as the Hawaiian islands, storm surge will be enhanced by the rapidly decreasing ocean depth as the wind-driven surge approaches the coast. The peak storm surge is on the right-front quadrant (left-front in the Southern Hemisphere) of the eyewall at landfall, where on-shore winds are the strongest, and at the leading edge of the eyewall. Contrary to a popular myth, the storm surge is entirely wind-driven water—it is not caused by the low pressure of the eye. Another factor in the severity of the storm surge is tide. Obviously, an 18-foot storm surge at high tide is that much worse than an 18-foot surge at low tide.