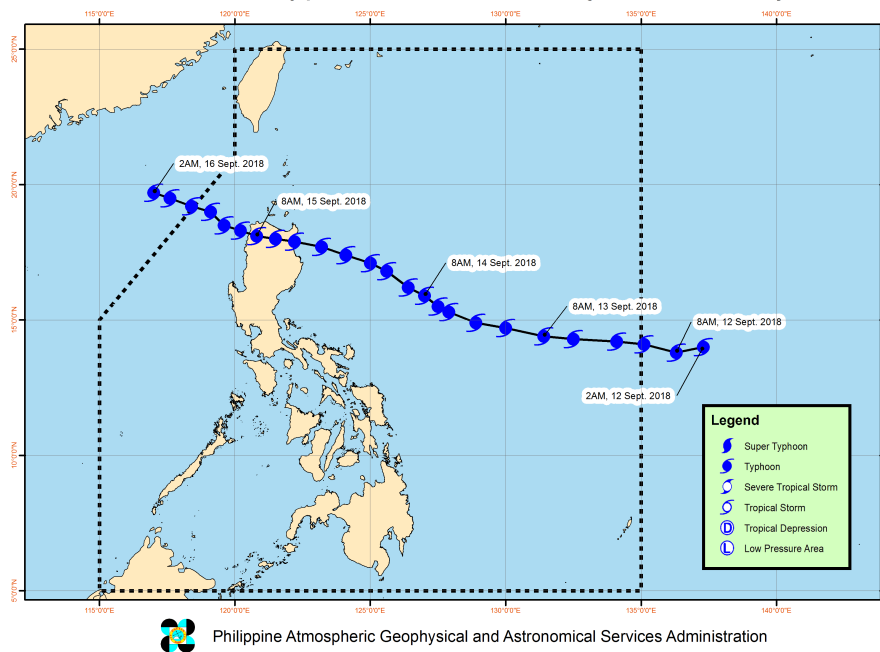


Typhoon Ompong (Mangkhut / 1822) Summary Report



Typhoon “OMPONG” is the 15th tropical cyclone (TC) to enter or develop within the Philippine Area of Responsibility (PAR) this year and the 3rd TC for the month of September. The Regional Specialized Meteorological Center (RSMC) Tokyo also named the typhoon “Mangkhut”. The name was contributed by Thailand, which refers to the “mangosteen fruit”.

OMPONG developed from an area of low pressure situated over the Marshall Islands in the evening of 7 September 2018, Philippine local time (hereafter PT). Twelve hours later, the system reached tropical storm (TS) intensity just northwest of Bikini Atoll in the Marshall Islands. OMPONG maintained a steady westward pace due to the steering influence of the ridge of high pressure situated to the north of the system. At 2:00 AM PT on 9 September, OMPONG intensified into a severe tropical storm (STS) while traversing the area of ocean to the north of the Micronesian state of Pohnpei. The STS continued to move westward threatening the Northern Mariana Islands. Then, at 2:00 PM PT on 9 September, OMPONG had reached typhoon (TY) intensity. The typhoon continued moving generally westward while gradually increasing in intensity. At around 2:00 PM PT on 10 September, the typhoon was threatening the island of Rota (northwest of Guam) in the Northern Mariana Islands. The typhoon made a close approach to the island later that afternoon (PT) with sustained winds of 145 km/h near the center and estimated gusts of up to 180 km/h. OMPONG left the Marianas and continued moving westward threatening the Philippines. At 8:00 PM on 11 September, the typhoon reached its peak intensity of 205 km/h. OMPONG maintained its intensity as it entered the PAR on 12 September at 3:00 PM. While inside the PAR, OMPONG started its gradual transition from westward to a more west-northwestward movement as it skirts the periphery of the weaker portion of the ridge of high pressure. The typhoon made landfall over the remote portion of Baguio, Cagayan at 1:40 AM on 15 September. Interaction with the rugged terrain of Northern Luzon after landfall caused the typhoon to weaken significantly after traversing Luzon. OMPONG left the landmass of Luzon at around 10:00 AM on 15 September and then left the PAR later that day at 9:00 PM, with an estimated maximum sustained wind of 145 km/h and gustiness of up to 165 km/h. The typhoon continued northwestward towards southern China where it made landfall in China’s Guangdong Province in the area west of Macau and Hong Kong.

The typhoon caused widespread damage across Northern and Central Luzon due to its intense nature and large size (~ 900 km). Interaction with the rugged terrain of Northern Luzon have aggravated the nature of rainfall, which caused flooding and landslides especially in the mountainous Cordillera Administrative Region (CAR).

Significant Meteorological Observations

The lowest recorded mean sea level pressure during the passage of OMPONG was 949.0 hPa, which was observed in Tuguegarao, Cagayan at 3:00 AM on 15 September. The highest maximum sustained surface winds (108 km/h) and gustiness (176 km/h) were observed in Aparri station in Cagayan (*Table 1*). Notable as well was the observed wind gust at Basco, Batanes, which reached 140 km/h. There were no available surface observations at the time of landfall in Baggao, Cagayan. These values are less intense than that of Super Typhoon LAWIN {Haima} (234 km/h gust and 942.1 hPa mslp in Tuguegarao City), which affected Northern Luzon in 2016.

Table 1. Surface Observations during the passage of TY OMPONG

STATION	Mean Sea Level Pressure (hPa)	Max 10-min. Winds (km/h)	Peak Gust (km/h)
Tuguegarao City, Cagayan	949.0	72	158
Aparri, Cagayan	953.3	108	176
Laoag City, Ilocos Norte	965.7	54	133

The bulk of the rainfall (*Figure 1*) was received over Luzon particularly in the Ilocos and Cordillera Administrative Regions (areas shaded in blue in *Figure 1*), with the highest observed 4-day rainfall (12 – 15 September) of 794 mm in Baguio City, Benguet. This value has exceeded the typical amount of rainfall for the month of September by 39.1% (normal is 570 mm). The second highest 4-day rainfall was observed in Tanay, Rizal (249 mm) and followed by Laoag City, Ilocos Norte (239.4 mm), which are about half of the typical amount of rainfall received in September.

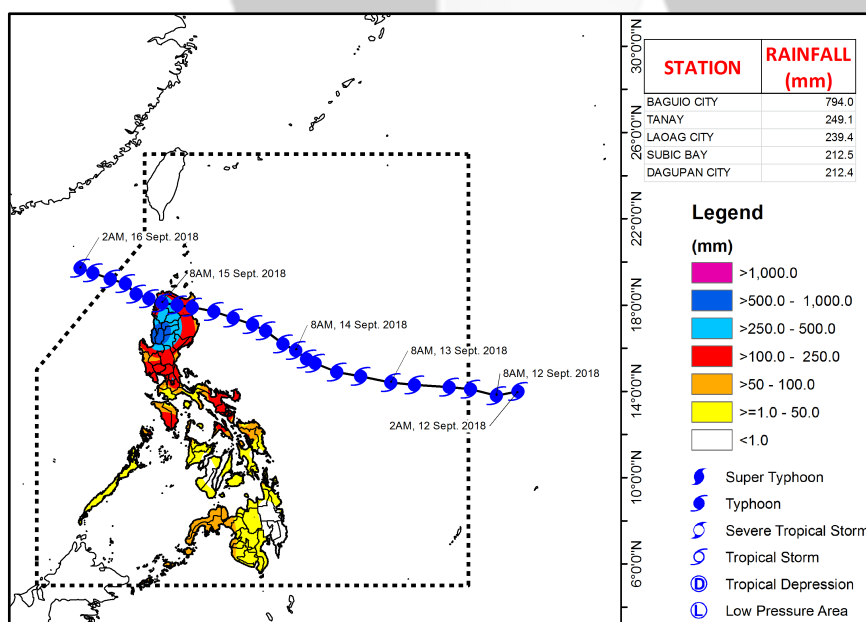


Figure 1. Rainfall Distribution during the passage of TY OMPONG (12 -15 September 2018)

In terms of daily rainfall (*Figure 2*), Benguet station recorded a total of 535 mm on 15 September, which was the highest 24-hr observation during the passage of OMPONG. Also, it is worth noting that this amount greatly exceeds the 24-hr rainfall during the passage of ONDOY {Ketsana} (455 mm in Science Garden, Quezon City) back in 2009. Tuguegarao station ranks second with 172.2 mm (14 September) and by Tanay, Rizal with 149.2 mm (14 September). The rainfall recorded in San Jose, Occidental Mindoro is also notable, 165.9 mm (13 September), but may not be directly associated with the typhoon.

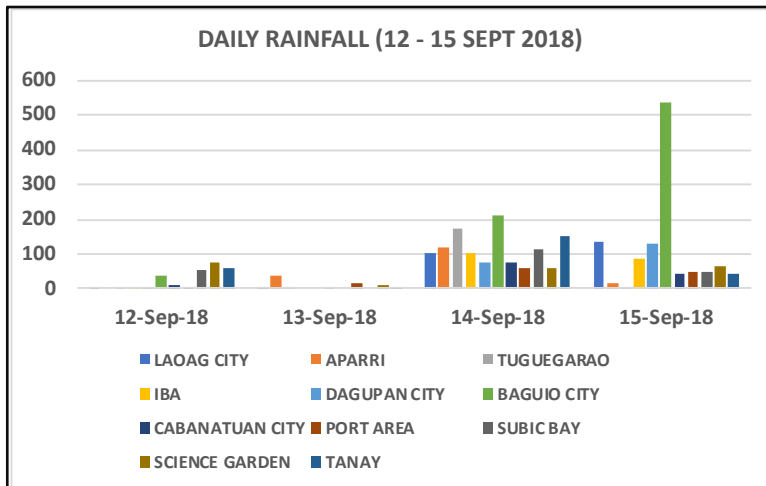


Figure 2. Daily Rainfall during the passage of TY OMPONG (12 -15 September 2018)

The highest six-hourly rainfall was also observed in Baguio station with a recorded value of 392 mm between 8:00AM – 2:00 PM on 15 September. Again, this amount has exceeded the 6-hourly rainfall observed during the passage of ONDOY {Ketsana} (347.5 mm in Science Garden Station, Quezon City).

Warning Information

A total of twenty-seven (27) domestic information, in the form of 23 Severe Weather Bulletins (SWB) and 4 Tropical Cyclone Advisories (TCA), were issued during the passage of the typhoon. In addition, a total of 14 International Warnings for Shipping (IWS) was issued within that period. The first TCA was issued on 10 September at 11:00 PM and the first SWB was issued on 12 September at 5:00 PM. A total 37 provinces were placed under Tropical Cyclone Warning Signals (TCWS) during the passage of TY OMPONG.

Preliminary Damage Statistics

As of 20 September 2018, the National Disaster and Risk Reduction and Management Council (NDRRMC) reported a total of eight (8) casualties, two (2) missing and twenty-one (21) injured. The total cost of damages is approximately P16.7 billion incurred from damages to infrastructure and agriculture in Regions 1, 2, 3, CALABARZON and the CAR.

Disclaimer

This report presents a summary of pertinent information obtained during the **operational warning** period. As such, the information presented herein are not final and are subject to change when additional data becomes available.