

# A warm 2018 marked by strike of severe typhoon Mangkhut

Globally, according to the World Meteorological Organization's preliminary assessment, 2018 is likely to be the fourth warmest year on record. The sea-ice extent over the Arctic was well below average throughout 2018 and reached record-low levels for the first two months of the year. Various extreme weather events continued to wreak havoc in different parts of the world in 2018, including cold spells in parts of Europe and Morocco; heatwaves in large parts of Europe, the Middle East, North Africa, Japan and the Korean Peninsula; and severe droughts in Uruguay, central and northern Argentina, eastern Australia and large parts of Europe. High temperatures and drought also contributed to destructive wildfires in California in the United States, western Canada, Norway, Sweden, Germany, Greece, Latvia, the United Kingdom and Ireland. Extreme rainfall triggered severe flooding and landslides in parts of Europe, East Africa, southwest India and western Japan. High winds, storm surges and torrential rain induced by tropical cyclones brought severe damage and heavy casualties to Tonga, Samoa, the Northern Mariana Islands, Yemen, Oman, Florida and North Carolina of the United States, east coast of Madagascar, east coast of India, Kobe and Osaka of Japan, the northern part of the Philippines and Guangdong province in China.

A weak and short-lived La Niña event was established in early 2018. Sea surface temperatures in the central and eastern equatorial Pacific became warmer and returned to normal in April. The warming trend continued into the second half of the year, with sea surface temperatures in the region exceeding the El Niño threshold in October and remaining above normal till December.

Locally, the weather in Hong Kong was warmer than usual in 2018, with an annual mean temperature of 23.9 degrees, 0.6 degrees above the 1981-2010 normal (Note 1) (or 0.9 degrees above the 1961-1990 normal), making it the joint third warmest year since records began in 1884. In particular, the monthly mean temperature of 28.3 degrees for May ranked the highest on record for the month since records began in 1884. The highest temperature recorded at the Hong Kong Observatory (HKO) in the year was 35.4 degrees on May 30, the 11th highest since records began in 1884. There were 26 Hot Nights (Note 2) and 36 Very Hot Days (Note 3) in Hong Kong in 2018, ranking the eighth highest and the third highest on record respectively.

There were 21 Cold Days (Note 4) in the year – 3.9 days more than the 1981-2010 normal. The lowest temperature recorded at the HKO in the year was 6.8 degrees on February 1.

The year 2018 was drier than normal in Hong Kong, with rainfall from February to May well below the normal figure. The annual total rainfall was 2 162.9 millimetres, a deficit of about 10 per cent compared to the 1981-2010

normal of 2 398.5 millimetres (or about 3 per cent below the 1961-1990 normal). Four Red Rainstorm Warning Signals were issued by the HKO in the year. The number of days with thunderstorms reported in Hong Kong in 2018 was 38 days, close to the 1981-2010 normal of 38.6 days.

A total of 33 tropical cyclones occurred over the western North Pacific and the South China Sea in 2018, more than the long-term (1961-2010) average of around 30. There were 13 tropical cyclones reaching typhoon intensity (Note 5) or above during the year, less than the long-term average of about 15, and seven of them reached super typhoon intensity (maximum 10-minute wind speed of 185 km/h or above near the centre). Six tropical cyclones necessitated the issuance of tropical cyclone warning signals, close to the long-term annual average. The Hurricane Signal No. 10 was issued during the passage of Mangkhut in September, while the No. 3 Strong Wind Signal was issued five times for the passages of Ewiniar in June, Son-tinh in July, Bebinca in August, Barijat in September and Yutu in November.

Severe Typhoon Mangkhut ferociously struck Hong Kong on September 16 and necessitated the issuance of the Hurricane Signal No. 10 for 10 hours. This is the second longest duration of the Hurricane Signal No. 10 in Hong Kong since 1946, slightly less than the record of 11 hours set by Typhoon York in 1999. The storm-to-hurricane force winds, record-breaking storm surge and squally heavy rain brought by Mangkhut ravaged the city for about half a day, causing the most serious and extensive damage to Hong Kong since Super Typhoon Ellen in 1983.

A detailed description of the weather for individual months is available on the Monthly Weather Summary webpage: [www.weather.gov.hk/wxinfo/pastwx/mws.htm](http://www.weather.gov.hk/wxinfo/pastwx/mws.htm). A detailed version of the Year's Weather for 2018 with some significant weather events in Hong Kong is available at: [www.weather.gov.hk/wxinfo/pastwx/ywx.htm](http://www.weather.gov.hk/wxinfo/pastwx/ywx.htm).

Note 1: Climatological normals for the reference period of 1961-1990, 1971-2000 and 1981-2010 are available at : [www.weather.gov.hk/cis/normal\\_e.htm](http://www.weather.gov.hk/cis/normal_e.htm). Climatological normals of 1981-2010 are referenced in the text unless otherwise stated.

Note 2: "Hot Night" refers to the condition with the daily minimum temperature equal to or higher than 28.0 degrees.

Note 3: "Very Hot Day" refers to the condition with the daily maximum temperature equal to or higher than 33.0 degrees.

Note 4: "Cold Day" refers to the condition with the daily minimum temperature equal to or lower than 12.0 degrees.

Note 5: Information on the classification of Tropical Cyclones is available at: [www.weather.gov.hk/informtc/class.htm](http://www.weather.gov.hk/informtc/class.htm).