

2019 warmest year on record for Hong Kong

With 11 months warmer than usual, 2019 was the warmest year for Hong Kong since records began in 1884. The annual mean temperature of 24.5 degrees was 1.2 degrees above the 1981-2010 normal (Note 1) (or 1.5 degrees above the 1961-90 normal). The annual mean maximum temperature of 27.1 degrees and the annual mean minimum temperature of 22.6 degrees were also the highest on record. In particular, the winter from December 2018 to February 2019 and the autumn from September to November 2019 were especially warm, with the mean temperatures reaching 19.1 degrees and 26.1 degrees respectively, both the highest on record. The highest temperature recorded at the Hong Kong Observatory in the year was 35.1 degrees on August 9, the 14th highest temperature recorded since 1884. There were 46 Hot Nights (Note 2) and 33 Very Hot Days (Note 3) in Hong Kong in 2019, the highest and joint fourth highest on record respectively.

On the other hand, the lowest temperature recorded at the Hong Kong Observatory in the year was 11.4 degrees on January 1, the highest annual absolute minimum temperature on record. There was only one Cold Day (Note 4) in the year, which is 16.1 days less than the 1981-2010 normal and the lowest annual number of Cold Days since 1884.

The annual total rainfall was 2,396.2 millimetres, near the 1981-2010 normal of 2,398.5 millimetres (or about 8 per cent above the 1961-90 normal). Three red rainstorm warnings were issued by the Hong Kong Observatory with no black rainstorm warning issued in the year. 2019 was a thundery year in Hong Kong with thunderstorms reported on 59 days, which was 20.4 days above the 1981-2010 normal of 38.6 days and the joint highest since records began in 1947.

A total of 28 tropical cyclones occurred over the western North Pacific and the South China Sea in 2019, less than the long-term (1961-2010) average of about 30. There were 16 tropical cyclones reaching typhoon intensity (Note 5) or above during the year, slightly more than the long-term average of about 15, and seven of them reached super typhoon intensity (maximum 10-minute wind speed of 185 kilometres per hour or above near the centre). In Hong Kong, five tropical cyclones necessitated the issuance of tropical cyclone warning signals, slightly less than the long-term average of about six in a year. The No. 8 Gale or Storm Signal was issued during the passage of Wipha in July, while the No. 3 Strong Wind Signal was issued during the passages of Kajiki in September.

Globally, 2019 was likely to be the second or third warmest year on record according to the World Meteorological Organization's preliminary assessment. Over the Arctic, the daily sea-ice extent minimum in September 2019 was the second lowest in the satellite record and October saw further record low extents. In 2019, various extreme weather events ravaged different parts of the world, including unrelenting heat waves in much of western and

northern Europe, the Middle East, India, Japan, Australia, New Zealand and southern South America; a significant cold spell in central North America; and severe drought in many parts of southeast Asia, the southwest Pacific, eastern Australia and the Greater Horn of Africa. Extreme rainfall triggered severe flooding in western and northern India, parts of southern China, Iran, northern Queensland in Australia, the west coast of New Zealand's South Island, Jayapura in Indonesia, a large part of the central United States and parts of Eastern Canada. High winds, storm surges and torrential rain induced by tropical cyclones brought severe damage and heavy casualties to parts of the United States East Coast, eastern Texas, Nova Scotia in Canada, Japan, India, the Philippines, Mozambique, parts of Zimbabwe and the Bahamas. Severe storms brought significant damage to parts of Spain, southern France, Corsica in France, Venice in Italy, Thessaloniki in Greece, eastern Africa, Pakistan and northern and western India. High temperature and drought also contributed to destructive wildfires in western North America, Alaska, Siberia in Russia, the Amazon basin, Bolivia, Venezuela, Indonesia and many parts of Australia.

In addition, a weak El Niño event was established in early 2019. Sea surface temperatures of the central and eastern equatorial Pacific then cooled and returned to normal in July. The sea surface temperatures of the region exhibited some warming towards the end of the year.

Detailed description of the weather for individual months is available on the Monthly Weather Summary webpage:

www.weather.gov.hk/en/wxinfo/pastwx/mws/mws.htm. A detailed version of the Year's Weather for 2019 with some significant weather events in Hong Kong is available at: www.weather.gov.hk/en/wxinfo/pastwx/ywx.htm.

Note 1: Climatological normals for the reference periods of 1961-90, 1971-2000 and 1981-2010 are available at www.weather.gov.hk/en/cis/normal.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/en/informtc/class.htm.