

An unusually hot July

Owing to the stronger than normal upper-air anticyclone over southern China, July 2021 was unusually hot in Hong Kong. The monthly mean minimum temperature of 27.7 degrees, the monthly mean maximum temperature of 32.6 degrees and the monthly mean temperature of 29.7 degrees were 0.8 degrees, 1.0 degrees and 0.8 degrees above their corresponding normal figures (or 0.9 degrees, 1.2 degrees and 0.9 degrees above their corresponding 1981-2010 normal figures) and were the second, third and fourth highest on record for July respectively. The monthly rainfall was 379.5 millimetres, slightly below the normal figure of 385.8mm (or slightly above the 1981-2010 normal of 376.5mm). The accumulated rainfall recorded in the first seven months of the year was 1 170.6mm, about 20 per cent below the normal figure of 1 468.2mm (or about 21 per cent below the 1981-2010 normal of 1 473.3mm) for the same period.

Under the influence of a southwesterly airstream, the weather of Hong Kong was a mixture of sunshine and showers on the first day of the month. Dominated by an anticyclone aloft, apart from a few showers, it was generally fine and very hot from July 2 to 5.

Meanwhile, an area of low pressure near Luzon intensified into a tropical depression on the morning of July 5. It skirted past the southwestern coast of Taiwan on the morning of July 6 and weakened into an area of low pressure near the Taiwan Strait that afternoon. Another area of low pressure over the central part of the South China Sea intensified into a tropical depression on the night of July 5. It tracked northwestwards towards Hainan Island on July 6. The tropical depression moved across the southwestern part of Hainan Island and entered Beibu Wan on July 7. It made landfall over the northern part of Vietnam and then weakened into an area of low pressure on July 8. Affected by the outer rainbands of these two tropical depressions, Hong Kong saw occasional squally showers and thunderstorms on July 6 and in the early part of July 7. With showers abating gradually during the day, local weather became very hot with sunny intervals on July 7.

Under the influence of the subtropical ridge and subsequent anticyclone aloft, apart from a few isolated showers, generally fine and very hot weather persisted from July 8 to 15. With plenty of sunshine, the temperature recorded at the Hong Kong Observatory soared to 35.4 degrees on July 15, the highest of the month. It was also the joint third highest temperature in July since records began in 1884. Moreover, dust devils were reported near the third runway construction site of Hong Kong International Airport on July 14 and 15.

Under the influence of a broad area of low pressure over the northeastern part of the South China Sea, the weather of Hong Kong was mainly cloudy with a few showers and isolated thunderstorms from July 16 to 17. More than 30mm of rainfall were recorded over parts of the territory and rainfall even exceeded 70mm over Tai Po District on these two days.

The area of low pressure over the northern part of the South China Sea intensified into a tropical depression later on July 18. On the morning of July 19, it lingered over the northern part of the South China Sea and further developed into a tropical storm which was named Cempaka. Cempaka moved northwestwards slowly towards the coast of western Guangdong and rapidly intensified into a typhoon on the early morning of July 20. It made landfall near Yangjiang and weakened into a severe tropical storm that night. Cempaka then moved across the coastal areas of western Guangdong and Guangxi and weakened gradually into a tropical depression from July 21 to 22. It entered Beibu Wan on the morning of July 23 and weakened into an area of low pressure over Beibu Wan on July 25. Affected by the rainbands associated with Cempaka, Hong Kong saw occasional heavy showers and squally thunderstorms from July 18 to 21. More than 200mm of rainfall were generally recorded over the territory on these four days, and rainfall even exceeded 400mm over Sai Kung District. A man died after being washed away by floods while hiking in Ma On Shan on July 20. Under the rain, the temperature recorded at the Hong Kong Observatory dropped to a minimum of 24.9 degrees on July 18, the lowest of the month.

Tropical Cyclone In-fa lingered over the seas east of Taiwan on July 22. It then moved towards eastern China and made landfall over the coast of the northern part of Zhejiang four days later. Affected by the subsiding air outside the circulation of In-fa and the subsequent light wind conditions in Hong Kong, apart from a few showers, local weather was sunny and very hot from July 22 to 28. The oppressive heat also triggered heavy showers and squally thunderstorms from July 23 to 28. The showers were particularly heavy from July 24 to 25, with more than 50mm of rainfall recorded over parts of the New Territories and Hong Kong Island on these two days. Under the influence of an active southwesterly airstream, the weather became unsettled with occasional showers and thunderstorms on the last three days of the month. More than 40mm of rainfall were recorded over most parts of the territory on these three days and rainfall even exceeded 100mm over Sheung Shui, Tseung Kwan O and the northern part of Lantau Island.

Five tropical cyclones occurred over the South China Sea and the western North Pacific in July 2021.

Details of issuance and cancellation of various warnings/signals in July are summarised in Table 1. Monthly meteorological figures and departures from normal for July are tabulated in Table 2.