

Why it feels hotter than what the thermometer may be showing

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High humidity can irritate but combine that with low wind speeds, for example, and it will get even more uncomfortable.

Weather scientists say that explains why it can feel hotter than what the thermometer may be showing.

But the mercury in Singapore did

hit new highs over the last two months, with the Republic recording on April 1 the second highest temperature at 36.8 deg C.

More recently, people here had to endure the highest temperature for May – a sweltering 36.7 deg C recorded on May 13.

The Straits Times speaks to experts to learn about the factors that influence how people feel the heat and whether climate change could worsen things.

Q What factors can make a hot day in Singapore feel worse?

A Light wind conditions, high humidity and Singapore's highly urbanised environment can all contribute.

During the inter-monsoon periods of April and May, and from October to November, people are more inclined to feel the heat due to light and variable surface winds, said Associate Professor Koh Tieh Yong.

Such conditions mean heat cannot be removed by ventilation, added Prof Koh, a weather and climate scientist from the Singapore University of Social Sciences.

Because of intense sunshine near the Equator, water from Singapore's surrounding seas evaporates at a high rate.

The moisture-laden air is carried to Singapore in the afternoon and

evening by sea breezes, making the city humid, he said.

The average annual relative humidity in Singapore is 83.9 per cent and it often reaches 100 per cent during prolonged periods of rain, according to the National Environment Agency's Meteorological Service Singapore (MSS) website.

In comparison, the annual average relative humidity in Los Angeles is between 54 and 58 per cent.

When relative humidity is high, the human body cannot lose heat easily by evaporating sweat, making it more uncomfortable and seemingly warmer, said Prof Koh.



Increases in temperature are more keenly felt in cities like Singapore due to the urban heat island effect.

This occurs when heat is trapped by urban surfaces such as concrete and asphalt, and from waste heat generated by air-conditioning and motor vehicles, said Associate Professor Winston Chow.

This is especially felt at night when heat stored by the built environment during the day is released, added Prof Chow, an associate professor of science, technology and society at the Singapore Management University.

For example, in a study he recorded a temperature of 30 deg C in Orchard Road at 10pm as compared with 23 deg C in Lim Chu Kang's forest at the same time.

Q Is it hotter in certain parts of Singapore?

A People in the north are more prone to experience scorching temperatures during the inter-monsoon months, data by the MSS has shown.

Admiralty logged a new record for this month at 36.7 deg C, surpassing the previous record high for the month of May of 36.5 deg C in 2010 and 2016. It also hit the second highest temperature recorded in Singapore on April 1.

Said Prof Koh: "Among the urban areas in Singapore, north Singapore lies farthest away from the Singapore Strait and gets the least of the cooling sea breezes."

"So, compounded by the daytime urban heat sources, north Singapore is more prone to high temperatures in the day during the inter-monsoon periods."

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