Publication: The Straits Times, pg A03
Date: 13 June 2022
Headline: S'pore's mean maximum temperatures on the rise

S'pore's mean maximum temperatures on the rise

These hit above 31 deg C for 53 of 60 months in period from 2017 to last year

Young Zhan Heng

The highest May temperature in Singapore of 36.7 deg C was recorded in Admiralty on May 13.

The previous record was 36.5 deg C, which happened once in 2010 and again in 2016.

In Singapore, April and May are typically warmer months, due to a weather phenomenon known as inter-monsoon conditions.

This happens when there is strong heat from the sun and light wind, the National Environment Agency's Meteorological Service Singapore has said.

However, an analysis by The Straits Times shows that Singapore has been experiencing higher mean maximum temperatures in April over the past 10 years.

The mean maximum temperature is the average of the daily maximum temperatures within a month.

ST found that between 2017 and last year, 53 out of the 60 months' mean maximum temperatures were above 31 deg C. This is an increase from 42 months for the five-year period from 2007 to 2011, and 48 for the 2012-2016 period.

In fact, compared with all other five-year periods since 1992, the 2017-2021 period saw the most number of months with a mean maximum temperature exceeding 31 deg C.

The previous high was in the 1997-2001 period, which saw 50 months' mean maximum temperature crossing 31 deg C because of the 1997-1998 El Nino event.

The rise can also be seen in Singapore's mean minimum temperatures.

December, one of Singapore's coolest months, has seen a steady increase in the mean minimum temperature between 1992 and last year.

Experts whom ST spoke to believe climate change is at least partially behind this rise in temperature.

Climate scientist Winston Chow from Singapore Management University said: "The increase in mean extreme temperature is consistent with the scientific assessment by the Intergovernmental Panel on Climate Change.

"Singapore's temperature is rising because of an increase in greenhouse gas emissions both locally and regionally."

Other factors behind the rising temperature include the urban heat island effect and temporary weather phenomena. The urban heat island effect happens when buildings, roads and vehicles release heat absorbed during the day into the environment at night.

Assistant Professor Perrine Hamel from Nanyang Technological University said: "This is one of the reasons why Singapore's temperature is increasing at two times the rate of other countries around the world."

Both Dr Chow and Prof Hamel warned that unless Singapore and surrounding countries cut down greenhouse gas emissions, the temperature will continue to rise in the foreseeable future.

However, Prof Hamel believes that as long as the temperature rise is not too high, the human body can adapt to the change.

She added that the country's infrastructure must adapt to the rising temperatures as well.

Having more urban vegetation, urban canyons, urban farms and white rooftops can help bring down the heat, she said, adding: "This will lead to cooler nights, which is important as that is when our body will cool down."

Dr Chow said: "The increase in temperature will result in more vulnerable populations, such as young children, the elderly and workers who spend a prolonged period of time working under the sun, being more susceptible to heat-related illnesses."

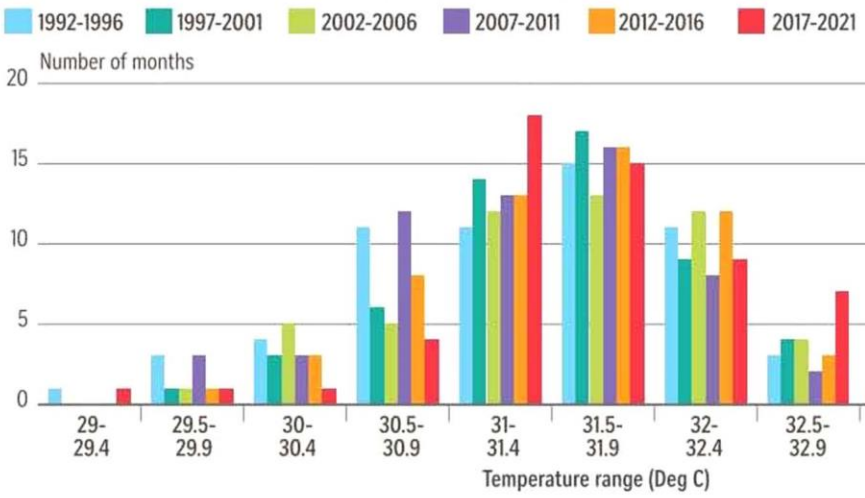
zhyoung@sph.com.sg

Warmer weather

An analysis by The Straits Times of weather statistics published by the National Environment Agency's Meteorological Service Singapore shows that Singapore has been experiencing warmer weather in the past five years than in other five-year periods over the past 30 years.

NUMBER OF MONTHS
2017 to 2021 saw 53 out of 60 months with mean maximum temperature above 31 deg C

Monthly mean maximum temperature (Five-year interval)

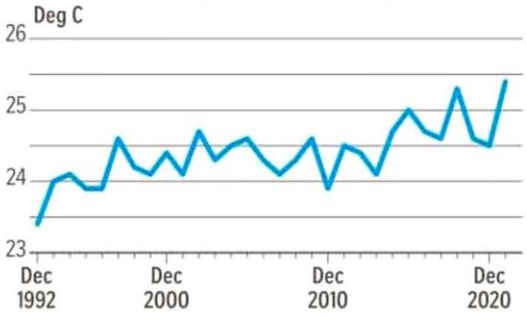


Monthly mean maximum temperature above 31 deg C

Years	Number of months
1992-1996	41
1997-2001	50
2002-2006	49
2007-2011	42
2012-2016	48
2017-2021	53

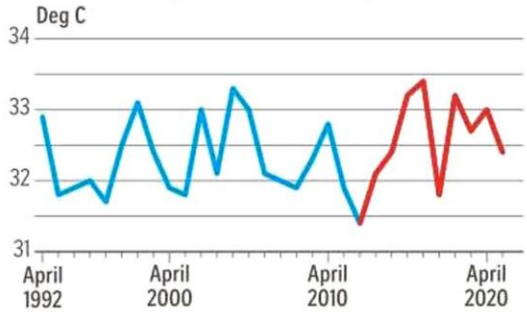
DECEMBERS NOT SO COOL NOW
December, one of the coolest months in Singapore, is seeing a steady increase in minimum temperatures over the years.

Mean daily minimum air temperature



MORE HOT APRILS
April, which is one of the warmest months in Singapore, has been getting warmer in the past 10 years.

Mean daily maximum air temperature



Source: NEA STRAITS TIMES GRAPHICS