

Eastern China set for record-hot summers, study says

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People gather to cool off on a beach in Qingdao, in eastern Shandong province, as a record-setting summer heat wave hit much of China, on August 8, 2013

By 2024, more than half of summers in eastern China will be as hot as in 2013, when the region was hit by a record-busting heatwave and devastating drought, a study said Sunday.

Based on current [global warming](#) trends, the big heat will happen even if rising greenhouse gas emissions are braked over the next decade, it said.

The summer of 2013 was the hottest on record in eastern China—a massive 1.1 degrees Celsius (two degrees Fahrenheit) above the long-term average.

On 31 days, the temperature reached or exceeded the heatwave benchmark of 35 degrees Celsius—more than double the usual June-August tally.

Nine provinces, with half a billion inhabitants, were affected. Direct economic losses, in China's most populated and economically developed region, have been put at 59 billion renminbi (\$9.6 billion).

Reporting in the journal *Nature Climate Change*, scientists in Beijing, Canada and the United States said the probability of a 2013-like summer in eastern China had increased by a factor of 60 since the early 1950s.

Adding to the risk is the region's rapid urbanisation, they said.

They pointed to an effect called the [urban heat island](#), in which concrete buildings and tarmac roads store heat during the day but fail to shed it all at night, thus ratcheting up the daytime temperature bit by bit.

The team, led by Xuebin Zhang of Environment Canada in Toronto, extrapolated temperatures on the basis of the region's weather from 1955 to 2013 and on internationally-used simulations for global warming.

"By 2024, at least 50 percent of summers will be as hot as the 2013 summer," they wrote.

The estimate holds for the lowest [greenhouse-gas emissions](#), which yields a warming scenario called RCP4.5, and for the highest emissions, called RCP8.5.

"The increase in summer heat would inevitably lead to more widespread, long-lasting and severe heatwaves in the region," the paper warned.

"(...) Combined with the region's rising population and wealth, (it) would produce higher risks for human health, agricultural systems and energy production and distribution systems if sufficient adaptation measures are not in place."

More information: Rapid increase in the risk of extreme summer heat in Eastern China, *Nature Climate Change*,
[dx.doi.org/10.1038/nclimate2410](https://doi.org/10.1038/nclimate2410)

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