Most cities too hot to host 2088 summer Olympics

Marathon used as benchmark to judge safety of possible future host cities.

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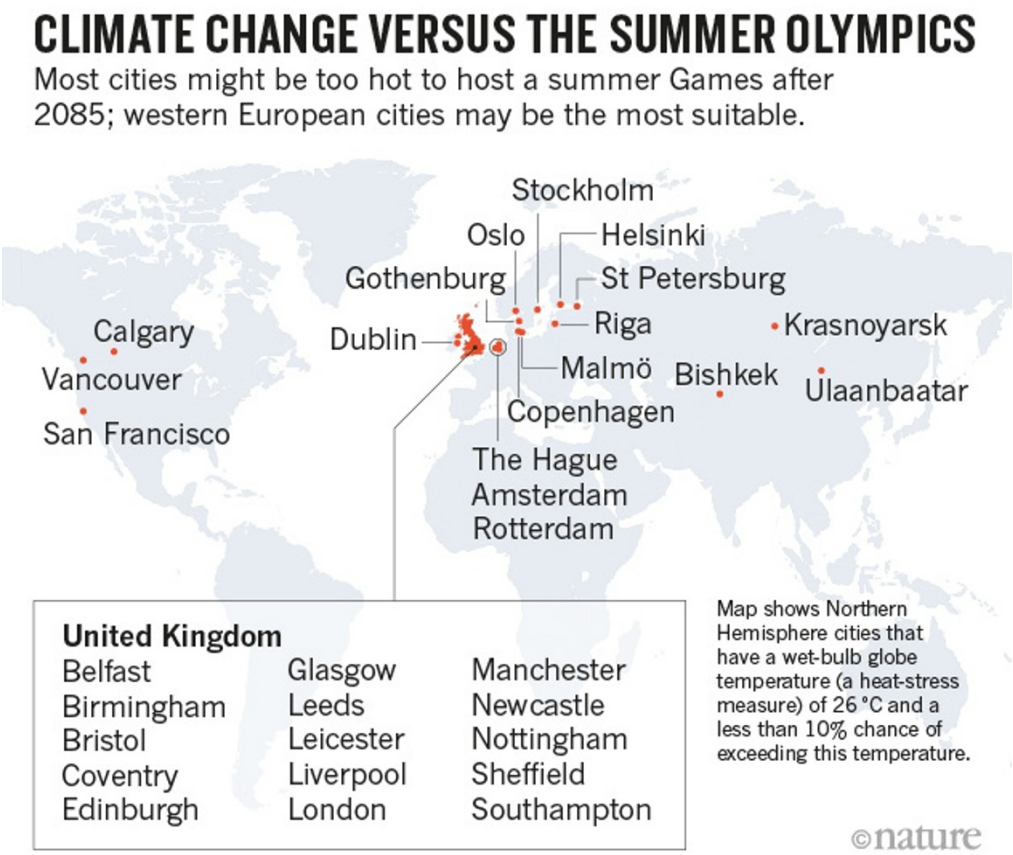
Most cities might be too hot to host the summer Olympic Games after 2085 because of climate change, according to an analysis in *The Lancet*[1].

Using climate modelling and a measure of heat stress to the human body, researchers led by Kirk Smith, an environmental-health researcher at the University of California, Berkeley, judged whether cities would be suitable for hosting the Games.

The authors used a measure known as the wet-bulb globe temperature, which takes into account how factors including temperature, humidity and wind speed affect people, especially during exercise. They used climate models under a high-emissions scenario to predict what this measurement would be for various cities in the future.

The team proposed that it would be low risk to run a marathon if the wet-bulb globe temperature is less than 26 °C in the shade. Any location that had a more than 10% chance of having higher temperatures for the marathon would not be a viable host city.



The study looked only at cities in the Northern Hemisphere — home to 90% of the world's population, and where summer occurs in July and August — and excluded those at an altitude of more than 1,600 metres (altitude had been a problem at the 1968 Mexico Olympics), as well as cities with populations of less than 600,000.

That left 25 suitable cities in western Europe for the 2088 Games — more than half of which are in the United Kingdom — and just 8 in the rest of the Northern Hemisphere, including San Francisco in California, St Petersburg in Russia and Ulaanbaatar in Mongolia.

And according to the researchers' calculations, none of the cities that bid for the 2020 summer Games — Tokyo, Madrid and Istanbul

— would be fit to be a host.

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References

1. Smith, K. R. *et al*. *Lancet* **388**, 642–644 (2016).