A race against time: Climate change and the Olympic Winter Games

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Time may be running out for some Olympic Winter Games host locations – including the 2014 host, Sochi (Russia) – according to an article in *Current Issues in Tourism*. Scott et al analyse two climatic indicators – minimum temperature of ≤0°C and snow depth of ≥30cm – both from a historical point of view and using future projections. They find that only 10 of the 19 previous host locations for the Winter Games are expected to remain suitable in the 2050s, and as few as 6 in the 2080s. This will have a major impact on where – and how – future Winter Games can be staged.

The Olympic Winter Games is a global mega-event. It is important not only for elite sporting competition, but also for tourism, media coverage, sponsorship and the promotion of culture. The Games can bring substantial benefits to a host city and region, and the bidding process to become a host is highly competitive. Climatic suitability is a key element in assessing locations, with weather conditions being critical for outdoor competitions, opening and closing ceremonies, the scheduling of events, spectator comfort and televised broadcasts.

Average February daytime temperatures of Winter Games locations have steadily increased, from 0.4°C in the period 1920–1950s, to 7.8°C in the twenty-first century. Given these trends, not all previous locations are likely to be suitable hosts for the Winter Games in future years.

Scott and colleagues focus on two specific conditions to assess the suitability of host locations, namely the probability that minimum daily

temperatures will be 0°C or lower, and the probability that the snow depth will be 30cm or more (with snowmaking capacity). They classify each of the 19 previous host locations for three time periods: baseline (1981–2010), 2050s (representing 2041–2070) and 2080s (representing 2071–2100). They consider low- and high-emission scenarios for the two future periods. On the basis of how often these conditions were, or are expected to be, fulfilled, locations are classified as climatically reliable, marginal/high-risk, or unreliable.

In a high-emission scenario, less than a third (6 out of the 19) of the previous host locations are projected to be climatically reliable by the 2080s. This raises a number of issues for organisers of the Winter Games. Over the next two decades there may be a greater impetus to award the Winter Games to locations that are expected to become unreliable by the 2050s. If fewer regions of the world are climatically suitable, other regions that have not previously hosted the Games may need to be considered.

As Scott et al conclude: "In a substantially warmer world, celebrating the second centennial of the Olympic Winter Games in 2124 would become increasingly challenging." Organisers of the Games need to consider changes in the scale and format of future events, and investigate technologies that can overcome climate vulnerabilities.

More information: www.tandfonline.com/doi/full/1 … 13683500.2014.887664

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