

Heat wave June 2019 in the Dolomites mountains - Italy

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The June 2019 European heat wave, well predicted in advance and rather accurately by the various weather models, did not fail to make its remarkable effects also on our peninsula.

The pronounced northern encroachment of the Saharan hot air, generated by a strong oscillation of the polar jet stream (Rossby wave)¹, has led to measure temperature never experienced in many European locations and in central-northern Italy, with considerable repercussions also on the human health^{1,2}.

In some cases, they represented the highest temperature for the month of June ever, in others they reached values never measured before, such as the 45.9 ° C of Gallargues-Le-Montueux in France². Heatwaves have also occurred in the past and a single episode may revert to normal meteorological variability. However, the analysis on a long-term time scale indicates, unequivocally, that heat waves are destined to become more frequent and intense, as consequences of climate change induced by anthropic activities².

During the hot phase of June, on the 27th our weather station in San Vito di Cadore, located on the slopes of Mount Antelao at an altitude of 1100 m asl, recorded the temperature of 35.1 °C, the highest value since it has been in operation (1996).

From a meteorological point of view, our 24 year records series is not a very long period, but the significance of the event consists in the fact that the previous temperature highest limit of 33.4 °C (11 August 2003, one of the hottest ever for Italy) has been abundantly exceeded.

The positive trend in the frequency of hot days (absolute temperatures higher than 30 °C) over the years has thus consolidated. Furthermore, 27 June 2019 has been the day with the highest average temperature ever since 1996, with 26.1 °C, while the following day was characterized by the highest minimum temperature in the historical series of the station, with 18.6 °C. A peculiarity, but always attributable to the climatic anomaly, is that this hot period was preceded by a unusual cold May, marked by the lowest absolute temperature we have never recorded for this month and equal to - 3.1 °C.

References

[1] Dann Mitchell D., Kornhuber K., Huntingford C., Uhe P. 2019. The day the 2003 European heatwave record was broken. The Lancet.

[2] Van Oldenborgh GJ, Philip S, Kew S, Vautard R, Boucher O, Otto F, Hausteine K, Soubeyroux J-M, Ribes A, Robin Y, Seneviratne S I, Vogel M M, Stott P, Maarten van Aalst M. 2019. Human contribution to the record-breaking June 2019.

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