

Evolution of heat wave occurrence over the Paris basin (France) in the 21st century

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From observations over the period 1951–2009 eight heat waves were extracted for the Paris Basin, i.e. a mean frequency of about 1 in 7 years (a heat wave being defined as at least one day with daily minimum 18°C and maximum 34°C, minimum duration of 3 days with relatively high temperatures).

In addition, for the periods 1960–1989, 2020–2049 and 2070–2099, the numbers of heat waves were projected (using the aforementioned definition of a heat wave) based on (1) several (regional and global) climate models and the A1B emission scenario, and (2) one regional climate model and 3 emission scenarios (A2, A1B, B1).

For the period 1960–1989 on average one heat wave in 10 years was calculated, for 2020–2049 1 heat wave every 2 years was projected, rising to at least 1, and up to 2, heat waves per year on average over 2070–2099. Heat wave duration also increased in time, with mean durations varying between 6 and 12 days over 2070–2099, and exceptional durations reaching 5 to 9 weeks.

Source: Lemonsu et al., 2014. Climate Research 61: 75–91.

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