



Mapping heat wave risk in the UK: Proactive planning for the 2050s

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Climate change projections suggest an increased frequency of heat waves in the UK over the coming decades. Such extreme events pose a serious threat to human health and are likely to impact upon health and social care systems and the infrastructures supporting them. This stress will result from both increased demands upon healthcare services and the ability of the infrastructure to cope, such as sufficient climate control in hospitals. Certain sectors of the population, such as older people, have an increased susceptibility to heat waves and hence are the focus of this research.

There is no universal definition of a heat wave, reflecting the acclimatisation of a population. Based on a review of the literature, this research therefore sets out a series of working definitions of a heat wave in the UK context from a human health perspective. Drawing on these definitions, the UK heat wave hazard was mapped for the 2050s (2040-2069) using daily minimum and maximum temperature data derived from the UKCP09 Weather Generator at 50 km resolution. The analysis was undertaken for the three different greenhouse gas emissions scenarios within UKCP09 (low, medium and high). Hot spots of increased heat wave risk were identified and comparisons made between the various model outputs. These data were then combined with demographic forecasts for the 2050s enabling the identification of areas with an ageing population. Results are presented showing the scale of the projected change in heat wave risk across the UK and the location of older people. These results will be used in proactive planning to help policymakers and practitioners respond more appropriately to the needs of vulnerable populations in the coming decades.

Key words: climate change; heat wave; risk mapping; vulnerability; risk reduction.