



A thermal comfort survey of the UK

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Between 2011 and 2014 a national citizen science project was conducted involving a range of partner organisations in the UK. The aim was to bring scientists and public closer together in exploring a set of key environmental and biological themes. A range of projects were undertaken including one on climate. As part of this a thermal comfort activity was conducted to explore how weather, climate and the local environment affect how hot or cold participants felt when engaged in a range of outdoor activities. We surveyed participants to discover their perception (how hot or cold does it feel to you?), their preference (would you prefer it to be ...), and their response (clothing). The survey replicated a similar survey conducted in a number of cities across Europe in a project called RUCOS. After some basic quality control we generated a sample of 2675 thermal comfort surveys for mainland UK during the period March 2011 to March 2014. The categorical survey results were compared to meteorological data from the Met Office using logistic regression methods in order to construct a set of statistical models to predict the thermal comfort response of the UK population. For example using the Universal Thermal Climate Index (UTCI) as a predictor of the proportion of the UK population that will report each thermal comfort class. These simple models were then evaluated using the out-of-sample data provided by the RUCOS project. Here we will demonstrate the consistency in thermal comfort reports between these different surveys, despite some significant differences in both the demographic and geographic sampling, and demonstrate the utility of such data to better interpret outdoor thermal comfort in the UK and evaluate different thermal comfort indices.