



SURE Research Publication Service

1) Reference of your publication:

Jaganmohan, M., Knapp, S., Buchmann, C.M. & Schwarz, N. (2016) The bigger, the better? The influence of urban green space design on cooling effects for residential areas. *Journal of Environmental Quality*, 45, 134-145

2) Hyperlink to the publication:

<https://dl.sciencesocieties.org/publications/jeq/abstracts/45/1/134>

3) Abstract:

It is well known that the cooling effect of an urban green space extends into its surroundings, cooling the immediate environment and mitigating urban heat problems. However, the effects of size, shape, and type of an urban green space on cooling remain uncertain. The objectives of our study were to quantify and compare the strength of the cooling effects of urban parks and forests, to determine how far the cooling effects extend into the surrounding residential environment, and to better understand how temperature gradients are driven by physical characteristics of the green space and the surroundings. Mobile air temperature measurements were performed in 62 urban parks and forests in the city of Leipzig, Germany, in the summer of 2013. Three indicators of cooling were calculated: the change in temperature (ΔT) at the park-width distance, the maximum ΔT , and the cooling distance. The relationships of these variables to the physical characteristics of the green spaces and their surroundings were examined in multiple regression models. Analyzing all three indicators revealed that cooling effects were greater in urban forests than in parks. Cooling increased with increasing size but in a different manner for forests and parks, whereas the influence of shape was the same for forests and parks. Generally, the characteristics of the green spaces were more important than the characteristics of the residential surroundings. These findings have the potential to assist in better planning and designing of urban green spaces to increase their cooling effects.

4) Contact details (Name, affiliation, email address)

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