Green spaces against heat waves

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Data

In order to estimate the influence of green spaces on local climate, climatic data were achieved from seven stations in London: Greenwich Park, Hampstead, Hampton W Wks, Heathrow, Kew Gardens, Northolt and Northwood. The mean values for normal period the 1981–2010 are available from this website: https://www.metoffice.gov.uk/research/climate/maps-and-data/uk-climate-averages/gcpv7fnqu. Since the heat waves are the most common in summer, we are the most interested in summer minimum and maximum air temperatures. It is also possible to get latitude, longitude and altitude of the stations on the website. The information will be obtained with the use of web scraping.

Nearest climate station:

Hampstead

Location: 51.56, -0.178   Altitude: 137 m above mean sea level   Station type: Observing Site

Average tables	Average graphs	Location comparison	Average maps

Station: Hampstead, 1981-2010

Month	Maximum temperature (°C)	Minimum temperature (°C)	Days of air frost (days)	Sunshine (hours)	Rainfall (mm)	Days of rainfall ≥1 mm (days)	Monthly mean wind speed at 10 m (knots)
January	7.1	2	8.6	57.5	64.7	12	–
February	7.4	1.7	9.5	76.4	46.6	9.7	–
March	10.5	3.5	4	107.1	48.9	10.2	–
April	13.3	5	1.5	151.6	51.5	9.9	–
May	16.8	8	0.1	192.2	58	9.5	–
June	19.9	10.9	0	191	54.2	9	–
July	22.4	13.2	0	199.9	50.4	8.5	–

Fig. 1 Example of the climatic data to be web-scraped and used for regression analysis. Source: https://www.metoffice.gov.uk/

The data on green spaces come from Foursquare location data. Specifically, we will get the number of green spaces, namely parks and gardens, in a certain radius around each of the climatic station. The idea is to try to extract green space counts for 1km, 5 km and 10 km radiuses to see which of them would have the largest impact on air temperature of the stations.

As for the analysis, we will primarily try to evaluate to influence with the use of regression analysis, where the number of green spaces will be the independent variable, while the air temperature will be the dependent variable. Additionally, we would also like to examine the data with the use of scatter plots and correlation analysis.