

3j – A Guide to Choropleth Maps

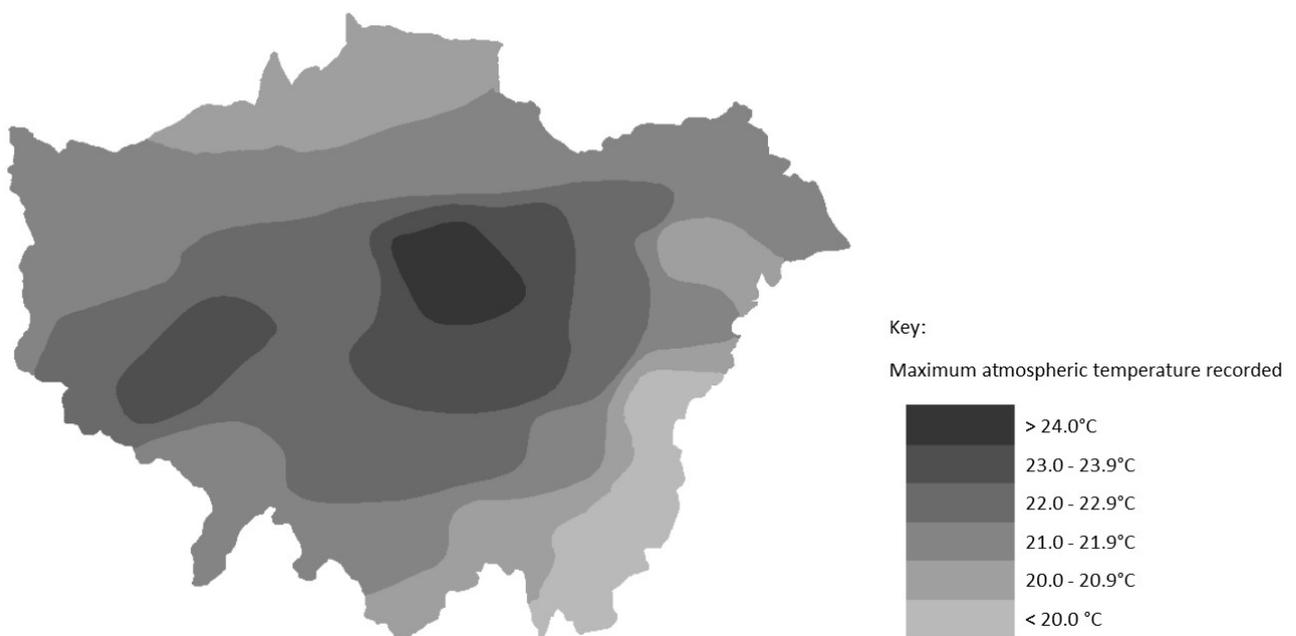
Choropleth maps are shaded maps where the intensity of the colour is indicative of the intensity of the phenomenon in question. A good choropleth map is one where the reader does not have to consult the key in order to understand the pattern or relationship that the map is conveying.

Why would we use choropleth shading?

A researcher would use choropleth mapping when data can be arranged spatially and into different categories. It allows the reader to easily see patterns in the way the data is spatially arranged.

The best type of choropleth map uses colours that are symbolic of the variable being displayed. For example, a map which shows the maximum rainfall data across a wide area may be coloured blue in varying intensity of shades. The use of different intensities of one chosen colour is what makes choropleth maps so easy to understand. The more there is of a phenomenon, or the greater the frequency of a certain observation, the darker, or bolder, the shade of that colour. The less there is of that phenomenon, the lighter or weaker that same colour will appear. If the map is going to be presented in black and white copy then a simple grey scale, such as the one below, should be used.

In some circumstances, it may be easier for the map reader if different colours are used alongside each other. In these cases, a colour spectrum (which still uses symbolic colours) is best used to allow the reader to instantly identify the pattern or relationship. For example, on a map that depicts temperatures over an area, one may use 'cool' colours, such as blues and greens, for the lower temperatures and 'warmer' colours, such as oranges and reds, for the higher temperatures.



A choropleth map showing the maximum recorded temperatures in London on a given day.



It is generally accepted that choropleth maps should be constructed from no more than seven different shades, though five is the number normally used. If the researcher uses too many different shades it can be difficult for the reader to differentiate between them.

In order to draw a choropleth map, it may be necessary to first draw a map with the appropriate isolines for the data. This is where lines separate the borders of one colours from another.

Choropleth shading usually relies on the researcher creating data bands for each colour shade (i.e. a range of numbers from one value to another that colour shade represents) which should then be shown through a key. These bands do not have to be equal in size and the decision over the size of the bands may rest on the size of the spread of the data. Therefore, the nature of choropleth maps mean that it is not always easy to directly read the actual data for a particular location: the reader may only be able to identify the data range within which that location falls.