

Weather Trends Project By Elliot Sales

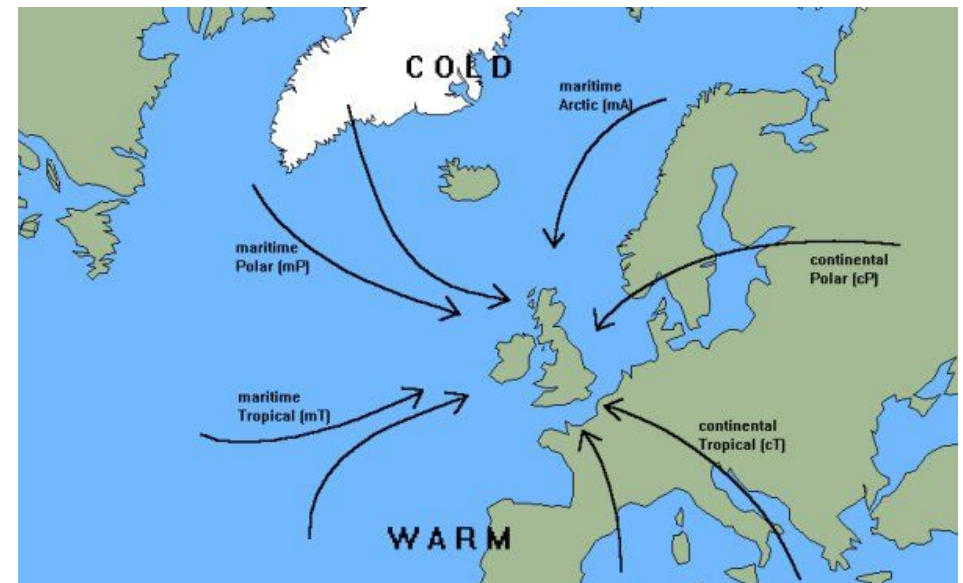
I first used SQL to extract the data from the Temperatures database, by using the “select * from”, then choosing the required table.

The “*” is used to select all data. Once the query was evaluated I was able to download the csv files.

I used google documents to work with all my data for this project and I live in London, so the comparison will be between London and Global temperature trends taken from 1950-2012 for London and 1950-2015 for global, using a 7 year moving average. The moving average was calculated using the “AVERAGE” function on google spreadsheets, taken from the average the first 7 years and I dragged the formula down to the last cell of data to calculate the rest of the averages.

The 7 year moving average for London and globally are shown in the line chart on the following page (fig 1). As shown in the graph, London has always remained hotter on average than global temperature since the start of the recorded data. Both temperatures are trending upwards over time. From around 1825, global temperature seems to have a steady trend upwards in temperature rise. However, as you can see, London’s temperature is extremely volatile and seems to have quite significant rises and falls in temperatures. This is also calculated using a 7 year moving average, so between the years the falls/rises will be even more dramatic.

The volatility in weather is a geographical reason. *Dr Helen Czerski explains how cold polar air from the north and warmer air from the Tropics push against each other to create the UK's changeable weather and unpredictable winters. This quote can be backed up in the diagram on the right (see resources for link).



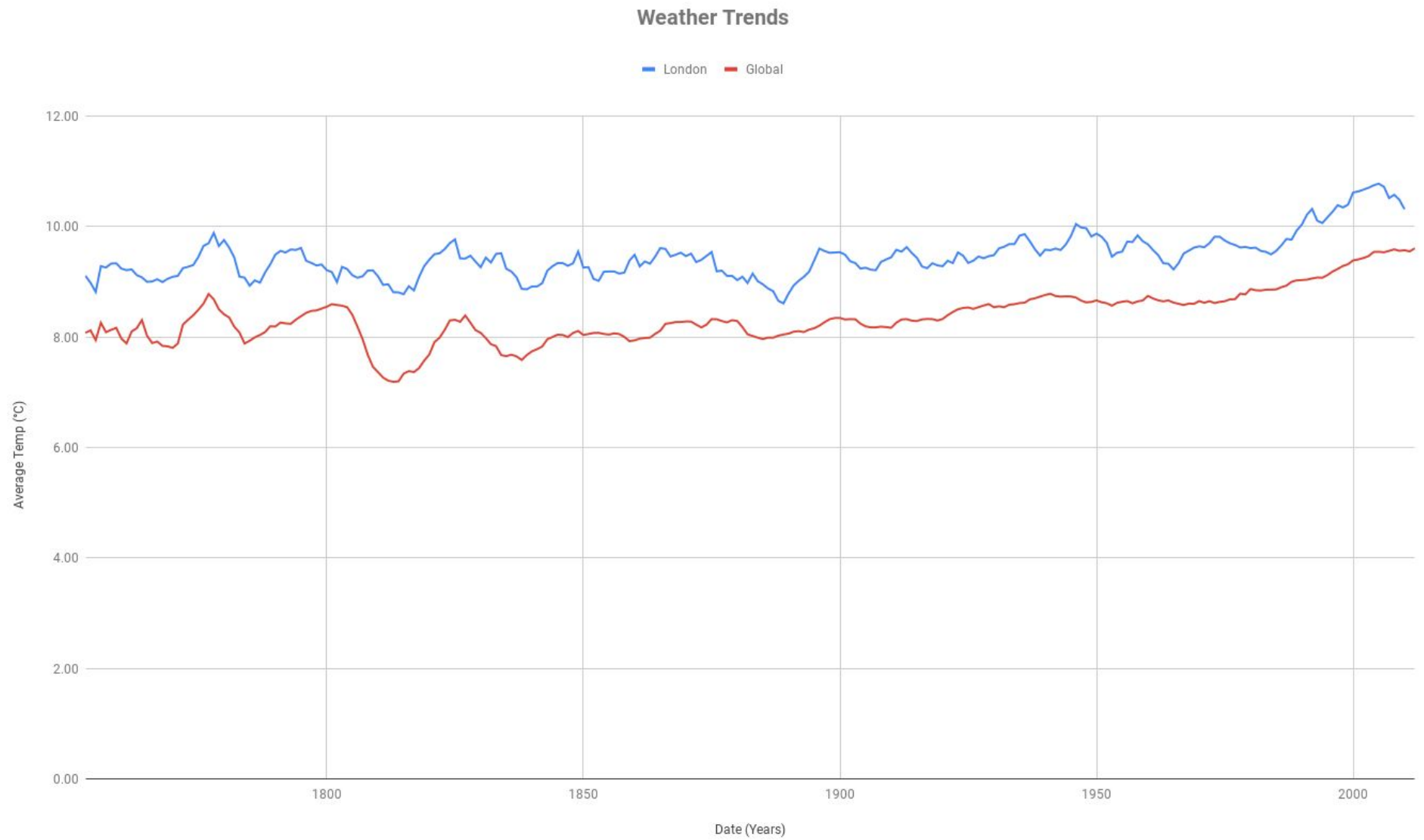


Fig 1-London & Global weather trends

Taken from the moving averages since 1750, London has had an increase in temperature by 13.28% (last avg - first avg = difference then difference / first avg * 100, rounded to 2 decimal place). The global increase has been 18.44% (last avg was taken at the same year as London). It is important to note that from 1743 to 1750 London had an increase in temperature by 35.94% but the data presented in the graph was only from 1750. It is unsure why this increase was so dramatic but other European countries such as Paris experienced a 46.14% increase in temperature. It may be possible that the War of the Austrian Succession could have had an effect which took place between 1740-1748 or it could have been down to technology and weather discoveries. According to psb* Benjamin Franklin made his first weather observations in 1743.

So overall, London's temperature is increasing at a slower rate than global temperature. For the last 15 averages taken, global temperature has increased 3.44% and London has increased only 0.48%. London has a population density of 5,701 people per square kilometre. According to USA today, London ranks 43rd in the list of most densely populated cities. This shows that if proper precautions are used we can at least slow the rate of temperature rise. It's especially important that the densely populated cities act accordingly, not only to protect our planet but also the people who live there.

A quote from the Daily Mail can be used to further back up that Britain is taking climate change seriously and it can be seen that measures are working. "One of the main ways the UK is tackling climate change is through the Climate Change Act. Passed in 2008, it became the world's first 'legally-binding national commitment to cut greenhouse gas emissions'. Under the Act, the UK must reduce greenhouse emissions by 80 per cent by the year 2050."

Resources

*Dr Helen Czerski quote taken from BBC News.

(<https://www.bbc.co.uk/news/av/science-environment-17223307/why-is-british-weather-so-unpredictable#:~:text=on%20British%20weather.-,Dr%20Helen%20Czerski%20explains%20how%20cold%20polar%20air%20from%20the,changeable%20weather%20and%20unpredictable%20winters.>)

Diagram link of polar air direction-

https://www.lordgrey.org.uk/~f014/usefulresources/aric/Resources/Teaching_Packs/Key_Stage_4/Weather_Climate/11.html

USA today list-<https://eu.usatoday.com/story/news/world/2019/07/11/the-50-most-densely-populated-cities-in-the-world/39664259/>

Daily Mail Quote-<https://www.dailymail.co.uk/sciencetech/article-7423483/What-UK-Government-doing-tackle-climate-change.html>

Psb Benajmin Franklin- https://www.pbs.org/benfranklin/l3_inquiring_weather.html