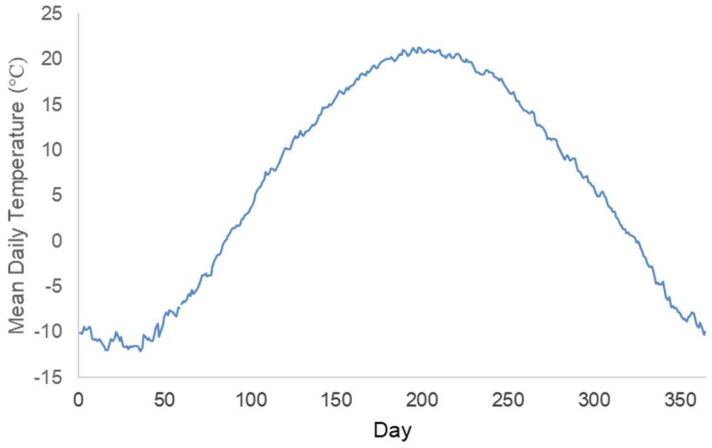
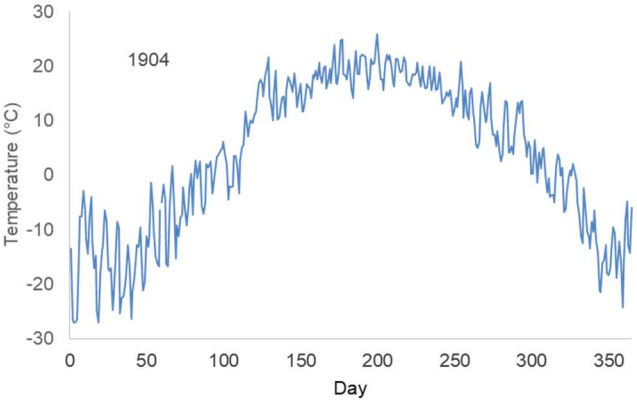
**Lab 4 – Daily Climate Data**

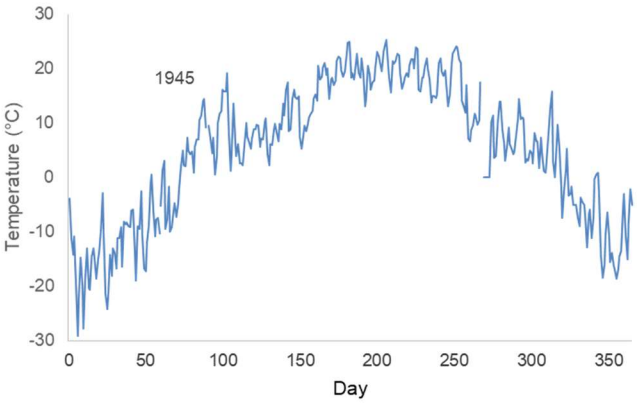
1.

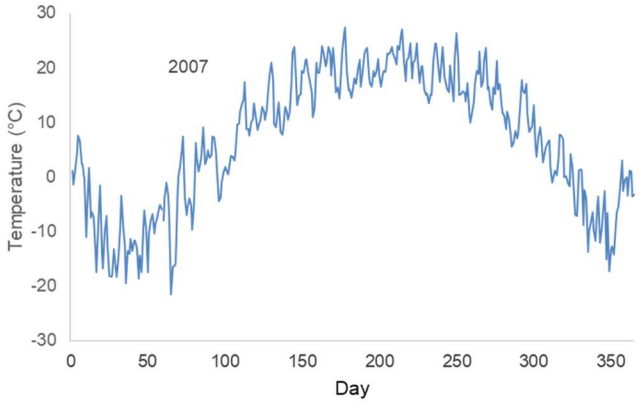



The warmest day of the year is around the 200th day, which would be about July 19th. July and August are the warmest months of the year in Ottawa, so this graph is accurate. The coldest day of the year is just before the 25th day of the year, which would be about mid-January. January and February are the coldest months of the year in Ottawa and this result is accurate.

2.



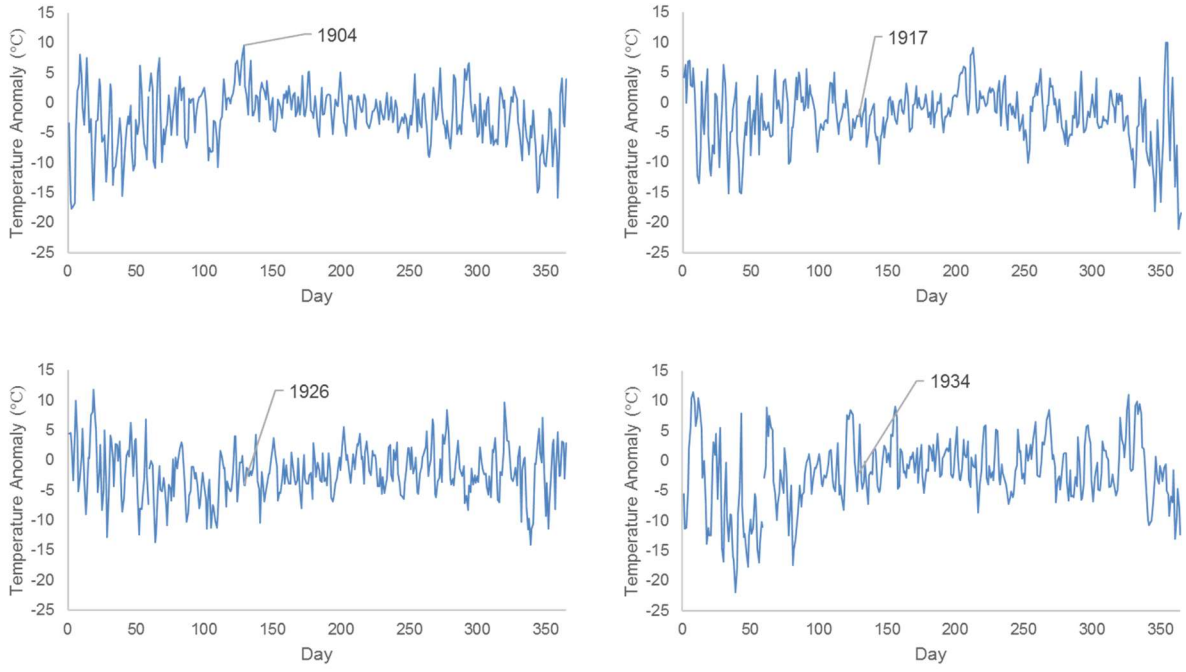



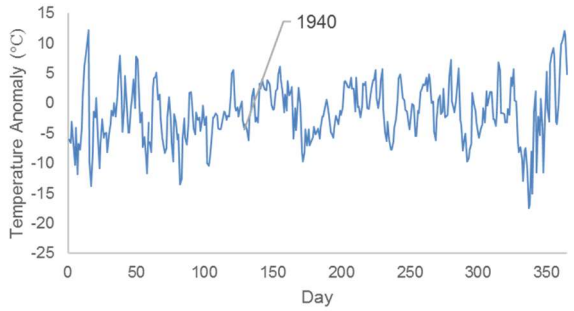



The three years I chose to analyze are 1904, 1945 and 2007. All three of the graphs have their maximum temperature around the 200th day of the year, or mid-July. However, the coldest day varies more for the graphs of the years 1904 and 2007 as their temperature is still decreasing at the beginning of January, and only reaches the coolest day around mid-February. For the graph of 1945, the coldest day is in the first 10 days of the year, much before the other years reached their coolest day. The transition between the seasons is very smooth for all three years. In 1904, there was a rapid increase in the temperature between the 110th day to about the 125th day, and so the temperature for that period would have been a much greater change than the other years graphed.

4.

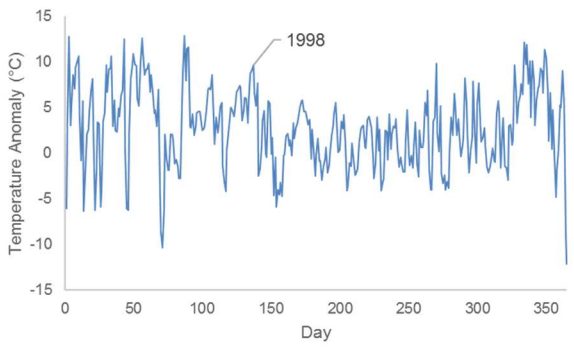
Five Coldest Years

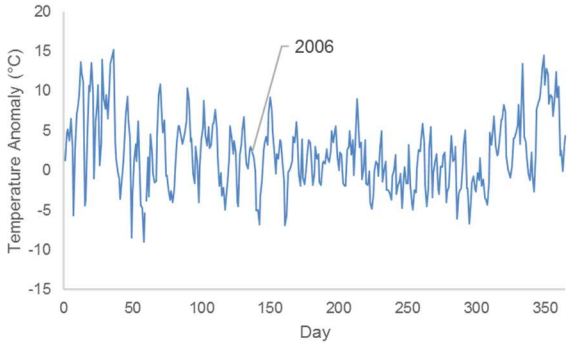


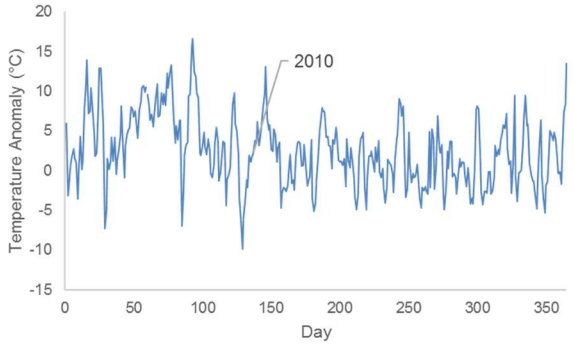


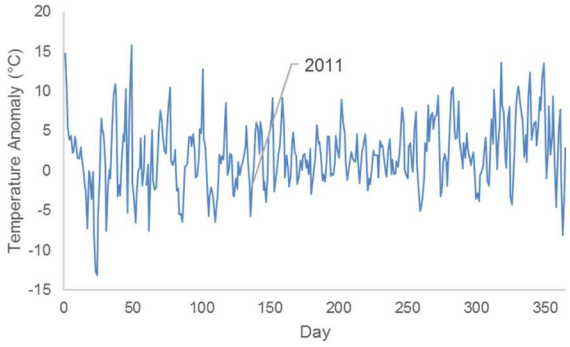

None of the five coldest years had a particularly warm summer, only reaching temperatures between 5 and 10 degrees. Their winters reached around minus 20 degrees Celsius, which is cold but not compared to some of the winters that have been experienced in Ottawa. The most likely reason these are the five coldest years is due to the graphs not having a wide variety of temperature throughout the year, not due to any season being particularly freezing. The graph of the year 1904 is the only one that follows the same cyclic pattern of having the coldest day in January or February and the warmest in July or August. The rest of the graphs strangely have their warmest day in January or December, as well as having their coldest day in January or February.

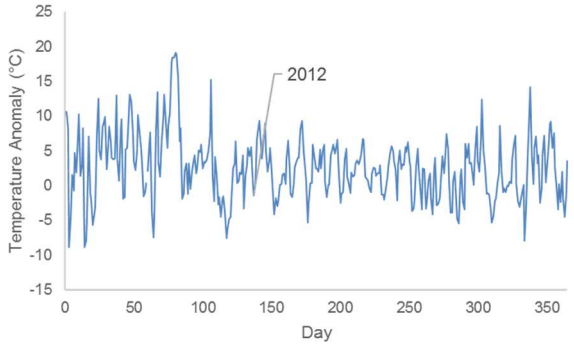
Five Warmest Years






The five warmest years have a greater variation in their temperature than the five coldest years. The coldest day for all the graphs, with the exception of 2010, have their coldest day in January or February, however 2010 has its coldest day in about late March or early April. The hottest days recorded for these years are all well above 5-10 degrees Celsius, and the coldest day is not colder than minus 10 degrees Celsius with the exception of 2011, when the coldest day was almost minus 15 degrees Celsius.

The five warmest years are all after the industrial revolution, and the two world wars. Machines and technology expanded drastically after the industrial revolution and world war one. Human population and technology increased exponentially after world war two. Looking at these historical events it easy to draw conclusions about why the five warmest years are after the period when humans went from using very little fossil fuels, to relying heavily on them. The five coldest years are all before the end of the second world war, which supports the theory of human impact with fossil fuels.