Shaina Lowenthal and Rhia Singh
HC 7
3/30/18

Honors Assignment 7

To compare the vegetation and temperature data we designed a program that compares the similarities of the two images. The two images we compared were captured by a NASA satellite to show the vegetation in green and the temperature in blue/purple. We uploaded the images individually as png files.

We then flattened both images to compress the array in 1 dimension to pick 1 element from each channel. The elements we chose were green and blue, respectively.

We filtered the vegetation image through a green channel (Image 1) and we filtered the temperature image through the blue channel (Image 2) because we thought those were the locations of variation.

After, we flattened both of the images that were filtered and printed the length of each array.

Then, we made a scatter plot depicting where the arrays were the same (Image 3). The x-axis represents the Green Color Channel and the y-axis represents the Blue Color Channel.

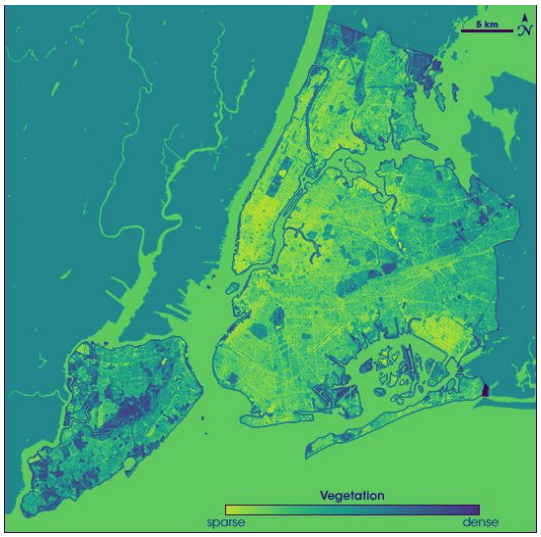

Image One

Image Two

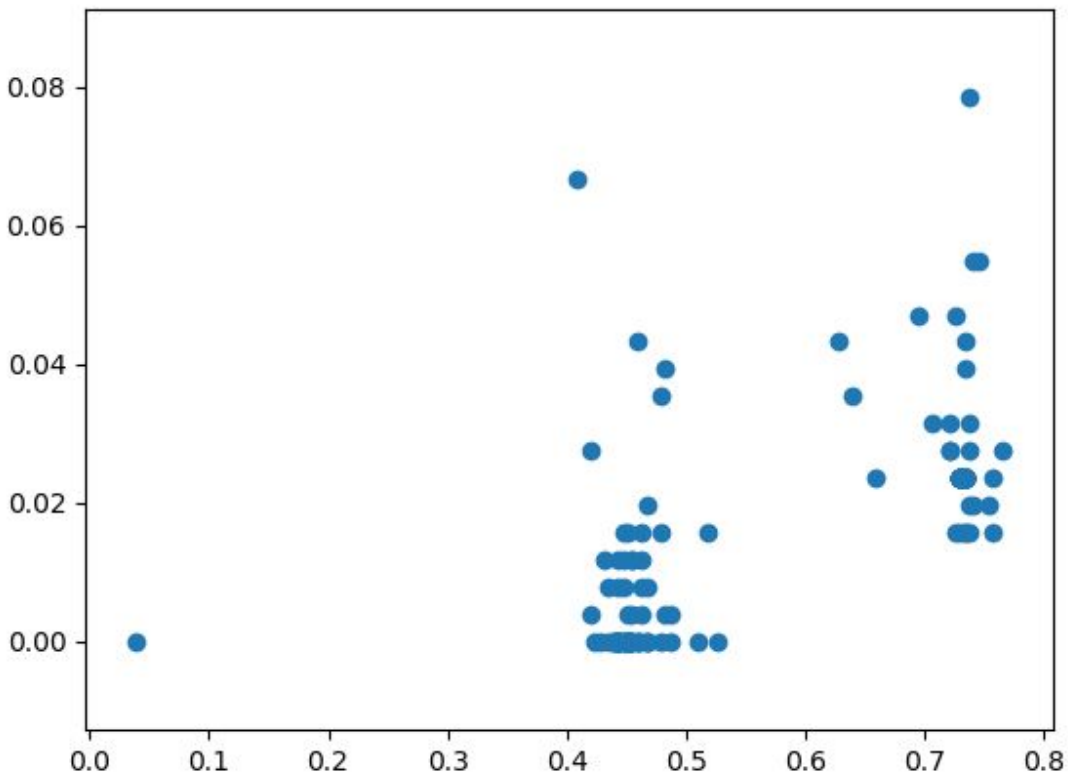

Image Three

The goal of this assignment was to determine if temperature and vegetation are linked. Our conclusion is that they are linked due to the fact that the scatter plot showed the points where both the vegetation and the temperature are equal. By filtering each image through the single color channel we were able to tell the exact points on the map of New York City where the vegetation was the densest and the temperature was the hottest. For example, there is a small section of central park that is blue on the temperature map but light green on the vegetation map. This demonstrates that the most sparse area and the area with the least temperature are correlated. This is one example of how our images proved that vegetation and temperature are linked.