Weekly Log #2

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2020-02-10

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Introduction

This week I focused on refreshing myself on spatial statistics and regression while attempting to perform the linear regression between cancer and nitrate.

1) Skills & Strategies

The most important skill for the beginning of this lab is the ability to successfully conduct linear regression, interpret the results, and be able to explain the results to anyone. My strategy is to continue practicing linear regression on my data locally in order to get comfortable with the process.

2) Processes & Steps

I'm on step number 3 of 5: Test Statistical Analysis. I performed my first attempt at linear regression on the data by turning both the cancer tracts and the interpolation into raster layers, then running regression on those raster layers. I received poor results, likely due to a difference in spatial units. I also think I may change my process; it might make more sense to aggregate the interpolated nitrate into vector census tracts and perform the linear regression on the vector layers at the census tract level.

3) Challenges & Contingencies

Performing and interpreting the linear regression on the data has proven challenging. Figuring out the best way to conduct the analysis is a time-consuming process. My contingencies include: Getting recommendations from classmates, the professor, and using ArcGIS Pro which has much better tool and process documentation.

4) What's Next

The immediate next step is to finish figuring out my approach to linear regression. Once I have a solid workflow documented, I will work on automating it so that it can happen on-the-fly with different parameters in the application's back-end.